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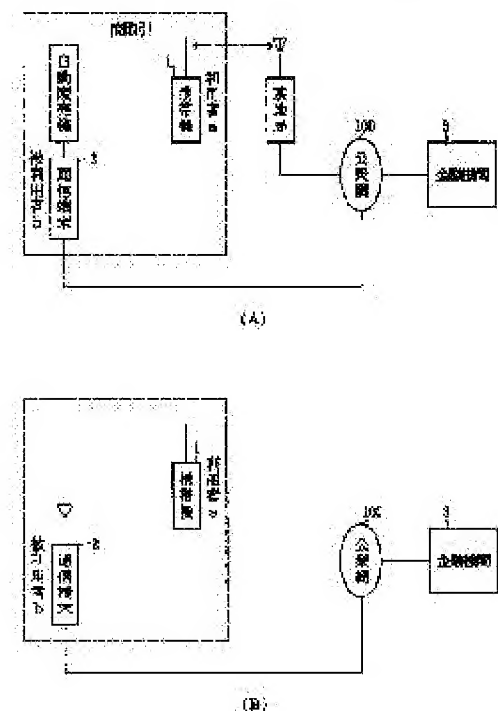
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**(54) CASHLESS SYSTEM AND PORTABLE SET USED FOR THE SYSTEM**



(57)Abstract:

PROBLEM TO BE SOLVED: To allow a single communication terminal equipment to have cashless provision for payment of all charges.

SOLUTION: A user (a) calls ID information to a financial institution 3 by using a portable equipment 1 and the financial institution 3 conducts cash processing between corresponding accounts based on information relating to ID information and transaction of the user. Or a user (b) uses the portable equipment 1 to be connected to a communication terminal equipment 2 and makes a call to the financial institution 3 by using the portable equipment or a communication terminal equipment after the connection to inform the information of the user (a) relating to the ID information and transaction and the financial institution 3 conducts cash processing between corresponding accounts based on the ID information and transaction of the user (a).

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**CLAIMS**

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[Claim(s)]

[Claim 1] In the cashless payment system which realizes dealings between the users-ed who receive the payment of a user and a countervalue which pays a countervalue with a cashless payment With the pocket machine which can transmit a user's ID information, and the financial institution having the account information corresponding to ID information Have the public correspondence network which holds a pocket machine and a financial institution, and a user does call origination to a financial institution with a pocket machine. It is the cashless payment system which transmits the information concerning dealings after connection of this call, and is characterized by a financial institution performing processing which relates to close payment between the accounts which each correspond based on the information concerning a user's ID information and dealings.

[Claim 2] It has the communication terminal which is held in a public correspondence network and receives a message using a user's-ed ID information. While a user does call origination to a financial institution with a pocket machine, a user's-ed ID information is notified after connection of this call and a financial institution does call connection to a communication terminal for a user's-ed ID information The cashless payment system of claim 1 characterized by performing processing which relates to close payment between the accounts which set up the field of dealings between the accounts which correspond based on each ID information of a user and a user-ed, and each correspond according to the amount-of-money information from a subsequent user or a subsequent user-ed.

[Claim 3] In the cashless payment system which realizes dealings between the users-ed who

receive the payment of a user and a countervalue which pays a countervalue with a cashless payment. The pocket machine which can transmit a user's ID information, a pocket machine, and the communication terminal in which wireless connection is possible, It has the public correspondence network which holds the financial institution having the account information corresponding to ID information, and a communication terminal and a financial institution. A user connects with a communication terminal with a pocket machine, and does call origination to a financial institution from a pocket machine or a communication terminal after this connection. It is the cashless payment system which notifies the information which starts a user's ID information and dealings after connection of this call, and is characterized by a financial institution performing processing which relates to close payment between the accounts which each correspond based on the information concerning a user's ID information and dealings.

[Claim 4] It is the cashless payment system of claims 2 and 3 which equip a user-ed or financial institution side with the time amount accounting means based on time amount meter-rate system service, and are characterized by a financial institution performing processing which relates to close payment between the accounts which each correspond according to the amount-of-money information on the output of a time amount accounting means.

[Claim 5] It is the cashless payment system of claims 2 and 3 which equip a user-ed or financial institution side with the distance accounting means based on distance meter-rate system service, and are characterized by a financial institution performing processing which relates to close payment between the accounts which each correspond according to the amount-of-money information on the output of a distance accounting means.

[Claim 6] The pocket machine characterized by making into a self subscriber's number a part or all of an ID number that is changed into a user's account information in a financial institution in the pocket machine used by the cashless payment system of claims 1 and 3.

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## DETAILED DESCRIPTION

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### [Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the pocket machine which uses dealings between the users-ed who receive the payment of a user and a countervalue which pays a countervalue in more detail by the KYASSHI loess system and this system which are realized with a cashless payment about the pocket machine used by the cashless payment system and this system.

[0002] It is diversified and the dealings accompanied by a countervalue need hand delivery of a thing (a bill, a check, a card, etc. are included) and insertion contact which apply distance meter-rate system service of time amount meter-rate system service of a motor pool, a game machine, etc., or a toll road to cash or it in service of the purchase of goods and a ticket, medical care, hairdressing, etc. each time at the time of a carrier beam at the time of a carrier beam today.

[0003]

[Description of the Prior Art] Conventionally, a credit card system can be used at the time of the purchase of goods, and payment of eating and drinking etc. However, in a credit card system, when procedure takes time amount a little compared with cash payment, the sense of reliability like cash payment is not necessarily acquired for a user and a user-ed always.

[0004] Furthermore, the acceptance organization of card payment is needed for a user-ed side, and the location which can use a card has a limit. In addition, it is considered that this point

possesses various cards, and management becomes complicated and the danger of loss and an unauthorized use also increases. Moreover, there are a telephone card, a JR (trademark) card, etc. conventionally, and since payment processing is carried out mechanically, these are user-friendly.

[0005] However, a user needs to purchase another card for every purpose of use, and seldom changes to payment by cash after all. On the other hand, it is necessary to fix the infrastructures for machine processing of a card (card telephone, ticket machine, etc.), and the spread has a limit naturally in a user-ed side.

[0006]

[Problem(s) to be Solved by the Invention] Therefore, the actual condition is that cashless-ization is not progressing conventionally in many fields, such as amusement centers, such as a bus, a taxi, a motor pool, a game, and pachinko, and a toll road. The object of this invention does not need special infrastructure development, but is to offer the pocket machine used by the cashless payment system and this system which can respond to payment of all tariffs with a cashless payment by the single communication terminal.

[0007]

[Means for Solving the Problem] The above-mentioned technical problem is solved by the configuration of drawing 1 (A). Namely, the cashless payment system of this invention (1) In the cashless payment system which realizes dealings between the users-ed who receive the payment of a user and a countervalue which pays a countervalue with a cashless payment With the pocket machine 1 which can transmit User's a ID information, and the financial institution 3 having the account information corresponding to ID information Have the public correspondence network 100 which holds the pocket machine 1 and a financial institution 3, and User a does call origination to a financial institution 3 with the pocket machine 1. Transmitting the information concerning dealings after connection of this call, a financial institution 3 performs processing which relates to close payment between the accounts which each correspond based on the information concerning User's a ID information, and dealings.

[0008] For example, there are not few cases where the user b-ed does not have a communication terminal 2 with business trip service of diving sales of goods or a massage. Also by this case, if User a has the pocket machine 1, a financial institution 3 can be accessed on that spot. And User's a ID information is transmitted with the pocket machine 1, and the information (namely, the user's b-ed (transfer place) {ID information or the account number, amount-of-money information}, etc.) concerning dealings is transmitted succeedingly. It is satisfactory even if User a does transmitting actuation, since the user's b-ed ID information or the account number are not secret.

[0009] It specifies that a financial institution 3 specifies the account number by the side of payment based on User's a ID information, and dealings are among Both a and b with the user's b-ed ID information or the account number. And processing which relates to close payment between the accounts which correspond based on this is performed. In this case, when a financial institution 3 is a correspondent bank, close payment processing is performed directly. Moreover, case [ whose financial institution 3 is / like a credit service firm ], record processing which relates to close payment for the time being is performed, and close payment processing is behind performed by dealings inter-bank.

[0010] Therefore, according to this invention (1), even if it does not perform special infrastructure development, it can respond to the tariff payment in all cases with a cashless payment with User's a pocket machine 1. In this case, User's a ID information is the information

which added the personal identification number to the subscriber's number or this subscriber's number of the pocket machine 1 preferably. Since the pocket machine 1 linked to the public correspondence network 100 is not asked about a carrier but the only subscriber's number is assigned to it with the whole public network, everybody can change under the situation of having the pocket machine 1 chiefly in each, with effective ID information as which a subscriber's number specifies User a instead of the account number of a credit card etc.

[0011] Moreover, if a personal identification number is added to the subscriber's number of the pocket machine 1 as User's a ID information, when the pocket machine 1 can be used by two or more persons, account protection of everybody is obtained. Moreover, preferably, the pocket machine 1 puts User's a ID information on a call origination signal, and is transmitted. If User's a ID information is put on a call origination signal and it transmits, the communications protocol of the existing pocket machine will not take special modification.

[0012] Moreover, it has the communication terminal 2 which is held in the public correspondence network 100, and receives a message using the user's b-ed ID information in this invention (2). While User a does call origination to a financial institution 3 with the pocket machine 1, the user's b-ed ID information is notified after connection of this call and a financial institution 3 does call connection to a communication terminal 2 for the user's b-ed ID information. The field of dealings is set up between the accounts which correspond based on each ID information of User a and the user b-ed, and processing which relates to close payment between the accounts which each correspond according to the amount-of-money information from subsequent User a or the subsequent user b-ed is performed.

[0013] When trading in the user's b-ed store and office, the user b-ed has communication terminals (a push-button phone, POS machine, etc.) 2. In this case, if a financial institution 3 does call connection to a communication terminal 2 for the user's b-ed ID information, it can plan insurance (check) of dealings. Moreover, since User a and the user b-ed can be processed for ID information (subscriber's number etc.), a system can be employed briefly.

[0014] Moreover, the above-mentioned technical problem is solved by the configuration of drawing 1 (B). Namely, the cashless payment system of this invention (3) In the cashless payment system which realizes dealings between the users-ed who receive the payment of a user and a countervalue which pays a countervalue with a cashless payment. The pocket machine which can transmit User's a ID information, the pocket machine 1, and the communication terminal 2 in which wireless connection is possible, It has the public correspondence network 100 which holds the financial institution 3 having the account information corresponding to ID information, and a communication terminal 2 and a financial institution 3. User a connects with a communication terminal 2 with the pocket machine 1, and does call origination to a financial institution 3 from the pocket machine 1 or a communication terminal 2 after this connection. Notifying the information which starts User's a ID information, and dealings after connection of this call, a financial institution 3 performs processing which relates to close payment between the accounts which each correspond based on the information concerning User's a ID information, and dealings.

[0015] Although a pocket machine accessible to a public network 100 is sufficient as the pocket machine 1 in this case, the pocket machine in which the wireless connection only with a communication terminal 2 is possible is sufficient as it. Such a pocket machine 1 is cheaply [small and ] realizable. Moreover, since the pocket machine 1 in this case is connected to a communication terminal 2, User a does not have the need of paying the communication link tariff of the section of that point. Preferably, in drawing 1 (A) or (B), the communication

terminal 2 is being interlocked with automatic vending machines, such as goods or a ticket. Therefore, an automatic vending machine can also purchase goods and a ticket with a cashless payment.

[0016] Moreover, in this invention (4), a user b-ed or financial institution 3 side is equipped with the time amount accounting means based on time amount meter-rate system service, and a financial institution 3 performs processing which relates to close payment between the accounts which each correspond according to the amount-of-money information on the output of a time amount accounting means. Therefore, a motor pool, a tennis court, etc. can be used with a cashless payment. Moreover, in this invention (5), a user b-ed or financial institution 3 side is equipped with the distance accounting means based on distance meter-rate system service, and a financial institution 3 performs processing which relates to close payment between the accounts which each correspond according to the amount-of-money information on the output of a distance accounting means.

[0017] Therefore, a toll road can also be used with a cashless payment. Preferably, call connection of the communication terminal 2 is carried out to a financial institution 3 at the time of initiation of accounting, and termination. Therefore, it becomes a deployment of a communication resource. Moreover, a communication link entrepreneur has an accounting means preferably. For an application which carries out call connection from accounting initiation to accounting termination, a communication link entrepreneur's accounting means (for example, call-based system (trademark) method) can be used effectively.

[0018] Moreover, the above-mentioned technical problem is solved by the configuration of drawing 1 (A) and (B). That is, the pocket machine of this invention (6) makes a part or all of an ID number that is changed into a user's account information in a financial institution 3 a self subscriber's number in the pocket machine 1 used by this invention (1) and the cashless payment system of (3). Therefore, such a pocket machine can be used in common with a wide range cashless payment service system.

[0019]

[Embodiment of the Invention] Hereafter, according to an accompanying drawing, the gestalt of two or more suitable operations for this invention is explained to a detail. In addition, the same sign is taken as the same or the thing which shows a considerable part through a complete diagram. Drawing 2 is drawing showing the system configuration by the gestalt of the 1st operation, and this drawing shows the example of application to the business in a store or office.

[0020] In drawing, the communication terminal according [ accord / 1 / a pocket machine (walkie-talkie terminal unit of a portable telephone and others) / 2 ] to a cable/wireless and 3 are financial institutions. The networks A and B by two or more entrepreneurs A and B existed in this system, and these networks A and B are mutually connected through the gateway exchange. The whole networks A and B are also called a public network. For example, the pocket machine 1 is held in the base station of Network A, and the communication terminal 2 is held in the terminal office of Network B. In addition, a pocket-type wireless terminal unit is sufficient as a communication terminal 2.

[0021] In the financial institution 3 in this system, Banks a and b, a credit service firm, etc. in which User a and the user b-ed trade to each are included. The financial institution 3 has registered the information which added the personal identification number to the subscriber's number or this subscriber's number of the pocket machine 1 as ID information on the pocket machine 1 (namely, the user a), and this ID information is matched with User's a account number (a bank name, a store name, account classification, etc. are included). The same is said of the

user's b-ed communication terminal 2.

[0022] Drawing 3 is drawing explaining the pocket machine of an example by the gestalt of operation, and it sets to drawing. 1 The body of a pocket machine, 61 a receiver (RV) and 63 for a front console (CSL) and 62 A microphone (MC), The keyboard with which 64 contains a liquid crystal display (DSP) and 65 contains a dialing key etc. (KBD), The baseband processing section (BB) in which 66 processes a sound signal, and 67 The codec in the case of a digital pocket machine (CDC), The communications control section for example, by the TDMA method and 69 68 For example, the transmitting section by pi / 4QPSK modulation technique, The receive section according [ accord / \*\* / receiving circuit changing switch (TR), and 71 / an antenna / 72 ] to pi / 4QPSK recovery method in 70, The test section (RSSIDT) of receiving level and 74 73 A frequency synthesizer, The input/output interface (IOIF) by the electrical and electric equipment or light in the case of making into the common bus of CPU CPU to which 75 performs main control of the pocket machine 1, the memory (MEM) for which CPU uses 76, and 77, and connecting 78 to an external device (or contact), and 79 are connectors (CN).

[0023] As an external device in this case, the communication terminal 2 grade of drawing 4 can be considered. Drawing 4 is drawing explaining the communication terminal of an example by the gestalt of operation, and it sets to drawing. 2 The body of a communication terminal, 81 a receiver (RV) and 83 for a hand set (HS) and 82 A microphone (MC), A console (CSL) and 85 84 A liquid crystal display (DSP), The keyboard (KBD) with which 86 contains a dialing key etc., the baseband processing section in which 87 processes a sound signal (BB), A circuit a codec (CDC) in case 88 is a digital communication method, and 89 The communications control section (CIF), The input/output interface (IOIF) by the electrical and electric equipment or light in the case of connecting to the common bus of CPU CPU to which 90 performs a modem (MDM) and 91 performs main control of a communication terminal 2, the memory (MEM) for which CPU uses 92, and 93, and connecting 94 to an external device, and 95 are connectors (CN).

[0024] As an external device in this case, the pocket machine 1 and automatic-vending-machine 5 grade of drawing 3 can be considered. However, when connecting with both, it has two or more input/output interfaces 4. Drawing 5 is drawing explaining the communication link actuation by the gestalt of the 1st operation. User a visits at the user's b-ed store with the pocket machine 1. If you buy goods, it will become the phase of tariff payment. User a does dial call origination to the specific telephone number (telephone number which can receive this service) of a financial institution 3 with the pocket machine 1.

[0025] The specific telephone number of a correspondent bank a is used as abbreviated dialing desirable beforehand, for example, and call origination is carried out by this abbreviated dialing. Or an exclusive key like a "payment key" is prepared in the console side of the pocket machine 1, and automatic call origination is carried out to a correspondent bank a by pressing this key. Moreover, if , on the occasion of call origination, User's a personal identification number is keyed beforehand. User's a ID information (namely, thing which attached the personal identification number which User a inputted into the subscriber's number or this subscriber's number of the pocket machine 1) is included in the call origination signal of the pocket machine 1.

[0026] User a notifies a financial institution 3 of the user's b-ed (namely, communication terminal 2) ID information by a dialing key etc. after call connection. It is satisfactory even if User a gets to know it, since the user's b-ed ID information is the account information on a transfer place. In addition, when a communication terminal 2 is equipped with the connection

interface 94, where a communication terminal 2 is contacted (wearing), call origination of the pocket machine 1 may be carried out. Preferably, if wearing to a communication terminal 2 is detected, call origination of the pocket machine 1 will be carried out automatically. In this case, a correspondent bank a is automatically notified of the user's b-ed ID information after call connection in a correspondent bank a through the connection interface 94 of a communication terminal 2, and the connection interface 78 of the pocket machine 1.

[0027] Or where a communication terminal 2 is contacted (wearing), call origination of the pocket machine 1 may be carried out to a correspondent bank b from a communication terminal 2. Preferably, if wearing of the pocket machine 1 is detected, call origination of the communication terminal 2 will be carried out automatically. In this case, a correspondent bank b is automatically notified of User's a ID information after call connection in a correspondent bank b through the connection interface 78 of the pocket machine 1, and the connection interface 94 of a communication terminal 2.

[0028] Or call origination may be independently carried out from the pocket machine 1 and a communication terminal 2, and each may notify a dealings partner's ID information. in the financial institution 3, each ID information of User a and the user b-ed was acquired by one call - or when the advice information on two independent calls has connected User a and the user b-ed mutually, it gets to know that business occurs among Both a and b.

[0029] A financial institution 3 specifies each account number based on each ID information of User a and the user b-ed. In this example, the account number a of User's a correspondent bank a and the account number b of the user's b-ed correspondent bank b are specified, and the imagination field of the business between Banks a and b is set up. In addition, setting out of a actual field may be performed in Bank a, it may carry out in Bank b, or you may carry out mutually among Banks a and b.

[0030] Furthermore, if a financial institution 3 (banks a and b) is required, it does call connection to a communication terminal 2 (or pocket machine 1) for the user's b-ed (or the user a) ID information, and it plans insurance of dealings. Moreover, if, the reason of call connection is notified to a communication terminal 2. The information about User's (payment side) a good/defect may be included in this advice. These advice data are sent by the indicative data or the audio guidance signal.

[0031] Then, the user b-ed transmits amount-of-money (tariff) information according to guidance of "please input the amount of money." Or amount-of-money information may be inputted also from User a, and you may collate in a financial institution 3. A financial institution 3 will perform close payment processing of a tariff between corresponding accounts, if amount-of-money information is checked. In this example, the amount of money is deducted from the account of the user a of Bank a, and this amount of money is transferred to the account of the user b of Bank b. Or close payment processing may be recorded for the time being in Banks a and b, and actual close payment processing may be performed on the date of assignment of the back. And User a and the user b-ed are notified of that.

[0032] User a and the user b-ed cut a call, and business ends them. And User a uses goods as a hand and opens a store. in addition -- referring for the utilization tariff of the periods (the degree of moon etc.) which are supposing that it is more nearly accessible than the pocket machine 1 in the database of a financial institution 3 in the above-mentioned case \*\*\*\* -- or commitment -- being based -- payment in installments -- disagreeable -- payment conditions, such as a bonus lump sum payment, can be specified now. Moreover, it is also possible to refuse payment as limit over from the direction of a financial institution 3.



[0033] In order to offer such various services efficiently, various services are menu-ized beforehand in the financial institution 3, and User a chooses the menu displayed on the pocket machine 1, and uses various services efficiently with the input means of dedication which advanced processing by the interactive mode among financial institutions 3, or connected with the pocket machine 1. Moreover, when holding call origination or account enquiry with the above-mentioned pocket machine 1, the personal identification number which User a inputted may be contained in User's a ID information, but if a personal identification number is intercepted, it becomes disadvantageous [ User a ].

[0034] In this case, the RSA cryptograph of a public key system etc. can be used, for example. That is, the cryptographic key and initial value which change with the pocket machine 1 first each time are received, and by transmitting the password information enciphered by it, even if monitored, it becomes possible to raise safety. Moreover, by the private key method, although a private key method may be used, since User a has held the key beforehand, when it transmits as it is, there is a possibility that it may be monitored the whole cipher and may be abused. In this case, it can be coped with by encryption by the output-feedback (OFB) method which changes initial value.

[0035] Next, actuation of an example in a superstore is explained. User a puts two or more goods into a tray, goes to a register (POS machine), equips a POS machine with the pocket machine 1, and does call origination from the communication terminal 2 of the pocket machine 1 or a POS machine. On the other hand, a salesclerk reads the bar code of each goods and presses the total key of a POS machine. A financial institution 3 is notified of the total amount of money by this, and close payment processing is carried out.

[0036] Next, actuation when a communication terminal 2 is included in the automatic vending machines 5, such as tobacco, juice, and a ticket, is explained. User a does call origination to a financial institution 3 in front of an automatic vending machine 5, and notifies ID information written by the automatic vending machine 5. Or an automatic vending machine 5 is equipped with the pocket machine 1, and call origination is carried out from the communication terminal 2 of the pocket machine 1 or an automatic vending machine 5.

[0037] A financial institution 3 transmits a sale enabling signal to an automatic vending machine 5 by having obtained specification of business, and the conventional cash will be injected an automatic vending machine 5 by this. And if User a performs selection actuation of goods, the goods concerned will be outputted and combined and advice of the amount of money will be performed to a financial institution 3 from a communication terminal 2. Or if there is advice of the close payment processing from a financial institution 3, an automatic vending machine 5 will output goods.

[0038] Even if such a cashless payment system does not carry out special infrastructure development, it is easily realizable only by assigning ID information to the existing POS machine, or incorporating the easy communication terminal 2 for the existing automatic vending machine. In this case, ID information may be assigned every POS machine and automatic vending machine 5, or may hold two or more POS machines and automatic vending machines in LAN, and may assign ID information (namely, the user's b-ed common transfer previous application post) common to them.

[0039] By the way, push-button phone-type telephone is sufficient as the user's b-ed communication terminal 2. In this case, after receiving a message from a financial institution 3 to telephone 2, according to voice guidance of "please input the amount of money", the user b-ed inputs the amount of money (for example, "\*10000#") by the dialing key. If , the user's b-ed

personal identification number can also be inputted by the dialing key.

[0040] moreover, when the user's b-ed communication terminal 2 is dial type telephone, or in [\*\*\*\*] the user's b-ed selling door to door to User's a \*\* or acting to User a as a street scam in the street Since it does not have the suitable communication terminal 2, the user b-ed can perform advice of the call origination to a financial institution 3, advice of the user's b-ed ID information metallurgy frame, guidance of user a / user-ed b HE, close payment processing, etc. through User's a pocket machine 1.

[0041] Moreover, a credit service firm may process the above-mentioned correspondent banks a and b. Actual close payment processing is performed among Banks a and b like the conventional credit service after dealings termination on the appointed date. Drawing 6 is drawing showing the system configuration by the gestalt of the 2nd operation, and this drawing shows the example of application to time amount meter-rate system service.

[0042] As time amount meter-rate system service, recreation halls, such as a motor pool, tennis, and a game, etc. can be considered. The communication terminal 2 in this case is included in the gate machine and game machine of a motor pool. Drawing 7 is drawing explaining the communication link actuation by the gestalt of the 2nd operation. Here, the example of application to the gate machine of a motor pool is explained. User a does call origination to a financial institution 3 in front of the gate machine of a motor pool, and notifies ID information written by the gate machine. Or a gate machine is equipped with the pocket machine 1, and call origination is carried out from the communication terminal 2 of the pocket machine 1 or a gate machine. In that case, if, the purport of the beginning of using is notified. A financial institution 3 will notify that to a communication terminal 2, if the field of dealings is set up. Thereby, if a gate machine is required, it publishes a parking ticket, and it opens the gate. And it becomes accounting initiation of the time amount meter-rate system in a gate machine side or a financial institution 3 side.

[0043] Although the call may be held after that, the cut direction is desirable from the point of a deployment of a communication resource. When a call is cut, and coming out of a motor pool, call connection is carried out to a financial institution 3 like the time of said beginning of using. If after call connection, the purport of activity termination is notified. Moreover, when the call is held, the purport of activity termination is only notified.

[0044] A gate machine or a financial institution 3 computes a tariff based on the time subtraction at the time of accounting initiation and accounting termination. And close payment processing of this tariff is performed and that is notified to the pocket machine 1 and a communication terminal 2. In addition, with service of the type which generally does not cut a call, the method (for example, call-based system method) which a communication link carrier charges can be used instead of establishing the above-mentioned time amount connection time based fee accounting means.

[0045] Drawing 8 is drawing showing the system configuration by the gestalt of the 3rd operation, and this drawing shows the example of application to distance meter-rate system service. As distance meter-rate system service, it can think of a highway, a bus, a railroad, etc. The communication terminal 2 in this case is included in the gate machine and bus of a highway, or the automatic ticket gate of a railroad. Drawing 9 is drawing explaining the communication link actuation by the gestalt of the 3rd operation.

[0046] Here, the case of a toll road is explained and 4 is a total center performed by concentrating the accounting of the distance meter-rate system. User a does call origination to the total center 4 near the inlet-port gate, and notifies ID information written by the inlet-port

gate. Or the pocket machine 1 is inserted in the gate machine of an inlet port, and call origination is carried out from the communication terminal 2 of the pocket machine 1 or a gate machine.

[0047] If it asks a financial institution 3 for User's a ID information if the total center 4 is required, and there is no trouble about payment, it will set up the field of dealings between both ID information, and will notify the purport of opening of the gate to the communication terminal 2 of the inlet-port gate. Thereby, if a gate machine is required, it publishes a transit ticket, and it opens the inlet-port gate. On the other hand, in the total center 4 side, it becomes accounting initiation of the distance meter-rate system. Since it is the call origination from the inlet-port gate, the purport of accounting initiation is obvious. Then, a call is cut.

[0048] User a does call origination to the total center 4 near the outlet gate, and notifies ID information written by the outlet gate. Or the pocket machine 1 is inserted in the gate machine of an outlet, and call origination is carried out from the communication terminal 2 of the pocket machine 1 or the outlet gate. The total center 4 sets up the field of dealings based on both ID information. Furthermore, each quotient setting out in the inlet-port gate and the outlet gate is connected using User's a ID information. Since it is the call origination from the outlet gate this time, the purport of accounting termination is obvious.

[0049] In the total center 4 side, a tariff is computed based on a part for the range difference at the time of accounting initiation and accounting termination. If, a financial institution 3 is notified of a tariff and close payment processing is performed. And that is notified to the communication terminal 2 of the pocket machine 1 and the outlet gate, and this opens the gate of the gate machine of an outlet. In addition, in the case of the toll road of tariff regularity, accounting of the fixed amount may be carried out and the gate of it may be opened after that at the inlet-port gate.

[0050] Drawing 10 is drawing showing the system configuration by the gestalt of the 4th operation, and 2a and 2b are the wireless terminals which added the radiocommunication function to each at the communication terminal of drawing 4 in drawing. The wireless terminal 2 is equipped with the radiocommunication functions (for example, the cordless handset in PHS between call function etc.) in which the pocket machine 1 and a direct interface are possible, and User a becomes accessible in a financial institution 3 or the total center 4 through the wireless terminal 2, without minding a public network.

[0051] Here, the case of a toll road is explained. Wireless terminal 2a is carrying out firm output of the broadcast-connection request by the control carrier etc., and if User a approaches the inlet-port gate, he will return an arrival-of-the-mail response to wireless terminal 2a, and will shift to a communication link carrier. Then, User a does call origination to the total center 4 near the inlet port of the gate, and notifies ID information written by the inlet-port gate.

[0052] Or the pocket machine 1 in this case can notify User's a ID information to wireless terminal 2a by non-contact, and wireless terminal 2a may carry out call origination of after this advice to the total center 4. Subsequent processing is the same as that of the above, and is good. Moreover, the same is said of the processing in the outlet gate. In addition, although the gestalt of two or more suitable operations for above-mentioned this invention was described, within limits which do not deviate from this invention thought, a configuration and control are performed and various change of these combination cannot be made also until it says.

[0053]

[Effect of the Invention] As stated above, according to this invention, special infrastructure development is not needed but it can respond to payment of all tariffs with a cashless payment with a single pocket machine.

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## TECHNICAL FIELD

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[Field of the Invention] This invention relates to the pocket machine which uses dealings between the users-ed who receive the payment of a user and a countervalue which pays a countervalue in more detail by the KYASSHI loess system and this system which are realized with a cashless payment about the pocket machine used by the cashless payment system and this system.

[0002] It is diversified and the dealings accompanied by a countervalue need hand delivery of a thing (a bill, a check, a card, etc. are included) and insertion contact which apply distance meter-rate system service of time amount meter-rate system service of a motor pool, a game machine, etc., or a toll road to cash or it in service of the purchase of goods and a ticket, medical care, hairdressing, etc. each time at the time of a carrier beam at the time of a carrier beam today.

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## PRIOR ART

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[Description of the Prior Art] Conventionally, a credit card system can be used at the time of the purchase of goods, and payment of eating and drinking etc. However, in a credit card system, when procedure takes time amount a little compared with cash payment, the sense of reliability like cash payment is not necessarily acquired for a user and a user-ed always.

[0004] Furthermore, the acceptance organization of card payment is needed for a user-ed side, and the location which can use a card has a limit. In addition, it is considered that this point possesses various cards, and management becomes complicated and the danger of loss and an unauthorized use also increases. Moreover, there are a telephone card, a JR (trademark) card, etc. conventionally, and since payment processing is carried out mechanically, these are user-friendly.

[0005] However, a user needs to purchase another card for every purpose of use, and seldom changes to payment by cash after all. On the other hand, it is necessary to fix the infrastructures for machine processing of a card (card telephone, ticket machine, etc.), and the spread has a limit naturally in a user-ed side.

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## EFFECT OF THE INVENTION

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[Effect of the Invention] As stated above, according to this invention, special infrastructure development is not needed but it can respond to payment of all tariffs with a cashless payment with a single pocket machine.

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## TECHNICAL PROBLEM

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[Problem(s) to be Solved by the Invention] Therefore, the actual condition is that cache loess-ization is not progressing conventionally in many fields, such as amusement centers, such as a bus, a taxi, a motor pool, a game, and pachinko, and a toll road. The object of this invention does not need special infrastructure development, but is to offer the pocket machine used by the cashless payment system and this system which can respond to payment of all tariffs with a cashless payment by the single communication terminal.

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## MEANS

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[Means for Solving the Problem] The above-mentioned technical problem is solved by the configuration of drawing 1 (A). Namely, the cashless payment system of this invention (1) In the cashless payment system which realizes dealings between the users-ed who receive the payment of a user and a countervalue which pays a countervalue with a cashless payment With the pocket machine 1 which can transmit User's a ID information, and the financial institution 3 having the account information corresponding to ID information Have the public correspondence network 100 which holds the pocket machine 1 and a financial institution 3, and User a does call origination to a financial institution 3 with the pocket machine 1. Transmitting the information concerning dealings after connection of this call, a financial institution 3 performs processing which relates to close payment between the accounts which each correspond based on the information concerning User's a ID information, and dealings.

[0008] For example, there are not few cases where the user b-ed does not have a communication terminal 2 with business trip service of diving sales of goods or a massage. Also by this case, if User a has the pocket machine 1, a financial institution 3 can be accessed on that spot. And User's a ID information is transmitted with the pocket machine 1, and the information (namely, the user's b-ed (transfer place) {ID information or the account number, amount-of-money information}, etc.) concerning dealings is transmitted succeedingly. It is satisfactory even if User a does transmitting actuation, since the user's b-ed ID information or the account number are not secret.

[0009] It specifies that a financial institution 3 specifies the account number by the side of payment based on User's a ID information, and dealings are among Both a and b with the user's b-ed ID information or the account number. And processing which relates to close payment between the accounts which correspond based on this is performed. In this case, when a financial institution 3 is a correspondent bank, close payment processing is performed directly. Moreover, case [ whose financial institution 3 is / like a credit service firm ], record processing which relates to close payment for the time being is performed, and close payment processing is behind performed by dealings inter-bank.

[0010] Therefore, according to this invention (1), even if it does not perform special infrastructure development, it can respond to the tariff payment in all cases with a cashless payment with User's a pocket machine 1. In this case, User's a ID information is the information which added the personal identification number to the subscriber's number or this subscriber's number of the pocket machine 1 preferably. Since the pocket machine 1 linked to the public correspondence network 100 is not asked about a carrier but the only subscriber's number is assigned to it with the whole public network, everybody can change under the situation of having the pocket machine 1 chiefly in each, with effective ID information as which a subscriber's number specifies User a instead of the account number of a credit card etc.

[0011] Moreover, if a personal identification number is added to the subscriber's number of the pocket machine 1 as User's a ID information, when the pocket machine 1 can be used by two or more persons, account protection of everybody is obtained. Moreover, preferably, the pocket machine 1 puts User's a ID information on a call origination signal, and is transmitted. If User's a ID information is put on a call origination signal and it transmits, the communications protocol of the existing pocket machine will not take special modification.

[0012] Moreover, it has the communication terminal 2 which is held in the public correspondence network 100, and receives a message using the user's b-ed ID information in this

invention (2). While User a does call origination to a financial institution 3 with the pocket machine 1, the user's b-ed ID information is notified after connection of this call and a financial institution 3 does call connection to a communication terminal 2 for the user's b-ed ID information. The field of dealings is set up between the accounts which correspond based on each ID information of User a and the user b-ed, and processing which relates to close payment between the accounts which each correspond according to the amount-of-money information from subsequent User a or the subsequent user b-ed is performed.

[0013] When trading in the user's b-ed store and office, the user b-ed has communication terminals (a push-button phone, POS machine, etc.) 2. In this case, if a financial institution 3 does call connection to a communication terminal 2 for the user's b-ed ID information, it can plan insurance (check) of dealings. Moreover, since User a and the user b-ed can be processed for ID information (subscriber's number etc.), a system can be employed briefly.

[0014] Moreover, the above-mentioned technical problem is solved by the configuration of drawing 1 (B). Namely, the cashless payment system of this invention (3) In the cashless payment system which realizes dealings between the users-ed who receive the payment of a user and a countervalue which pays a countervalue with a cashless payment. The pocket machine which can transmit User's a ID information, the pocket machine 1, and the communication terminal 2 in which wireless connection is possible, It has the public correspondence network 100 which holds the financial institution 3 having the account information corresponding to ID information, and a communication terminal 2 and a financial institution 3. User a connects with a communication terminal 2 with the pocket machine 1, and does call origination to a financial institution 3 from the pocket machine 1 or a communication terminal 2 after this connection. Notifying the information which starts User's a ID information, and dealings after connection of this call, a financial institution 3 performs processing which relates to close payment between the accounts which each correspond based on the information concerning User's a ID information, and dealings.

[0015] Although a pocket machine accessible to a public network 100 is sufficient as the pocket machine 1 in this case, the pocket machine in which the wireless connection only with a communication terminal 2 is possible is sufficient as it. Such a pocket machine 1 is cheaply [small and ] realizable. Moreover, since the pocket machine 1 in this case is connected to a communication terminal 2, User a does not have the need of paying the communication link tariff of the section of that point. Preferably, in drawing 1 (A) or (B), the communication terminal 2 is being interlocked with automatic vending machines, such as goods or a ticket. Therefore, an automatic vending machine can also purchase goods and a ticket with a cashless payment.

[0016] Moreover, in this invention (4), a user b-ed or financial institution 3 side is equipped with the time amount accounting means based on time amount meter-rate system service, and a financial institution 3 performs processing which relates to close payment between the accounts which each correspond according to the amount-of-money information on the output of a time amount accounting means. Therefore, a motor pool, a tennis court, etc. can be used with a cashless payment. Moreover, in this invention (5), a user b-ed or financial institution 3 side is equipped with the distance accounting means based on distance meter-rate system service, and a financial institution 3 performs processing which relates to close payment between the accounts which each correspond according to the amount-of-money information on the output of a distance accounting means.

[0017] Therefore, a toll road can also be used with a cashless payment. Preferably, call

connection of the communication terminal 2 is carried out to a financial institution 3 at the time of initiation of accounting, and termination. Therefore, it becomes a deployment of a communication resource. Moreover, a communication link entrepreneur has an accounting means preferably. For an application which carries out call connection from accounting initiation to accounting termination, a communication link entrepreneur's accounting means (for example, call-based system (trademark) method) can be used effectively.

[0018] Moreover, the above-mentioned technical problem is solved by the configuration of drawing 1 (A) and (B). That is, the pocket machine of this invention (6) makes a part or all of an ID number that is changed into a user's account information in a financial institution 3 a self subscriber's number in the pocket machine 1 used by this invention (1) and the cashless payment system of (3). Therefore, such a pocket machine can be used in common with a wide range cashless payment service system.

[0019]

[Embodiment of the Invention] Hereafter, according to an accompanying drawing, the gestalt of two or more suitable operations for this invention is explained to a detail. In addition, the same sign is taken as the same or the thing which shows a considerable part through a complete diagram. Drawing 2 is drawing showing the system configuration by the gestalt of the 1st operation, and this drawing shows the example of application to the business in a store or office.

[0020] In drawing, the communication terminal according [ accord / 1 / a pocket machine (walkie-talkie terminal unit of a portable telephone and others) / 2 ] to a cable/wireless and 3 are financial institutions. The networks A and B by two or more entrepreneurs A and B existed in this system, and these networks A and B are mutually connected through the gateway exchange. The whole networks A and B are also called a public network. For example, the pocket machine 1 is held in the base station of Network A, and the communication terminal 2 is held in the terminal office of Network B. In addition, a pocket-type wireless terminal unit is sufficient as a communication terminal 2.

[0021] In the financial institution 3 in this system, Banks a and b, a credit service firm, etc. in which User a and the user b-ed trade to each are included. The financial institution 3 has registered the information which added the personal identification number to the subscriber's number or this subscriber's number of the pocket machine 1 as ID information on the pocket machine 1 (namely, the user a), and this ID information is matched with User's a account number (a bank name, a store name, account classification, etc. are included). The same is said of the user's b-ed communication terminal 2.

[0022] Drawing 3 is drawing explaining the pocket machine of an example by the gestalt of operation, and it sets to drawing. 1 The body of a pocket machine, 61 a receiver (RV) and 63 for a front console (CSL) and 62 A microphone (MC), The keyboard with which 64 contains a liquid crystal display (DSP) and 65 contains a dialing key etc. (KBD), The baseband processing section (BB) in which 66 processes a sound signal, and 67 The codec in the case of a digital pocket machine (CDC), The communications control section for example, by the TDMA method and 69 68 For example, the transmitting section by pi / 4QPSK modulation technique, The receive section according [ accord / \*\* / receiving circuit changing switch (TR), and 71 / an antenna / 72 ] to pi / 4QPSK recovery method in 70, The test section (RSSIDT) of receiving level and 74 73 A frequency synthesizer, The input/output interface (IOIF) by the electrical and electric equipment or light in the case of making into the common bus of CPU CPU to which 75 performs main control of the pocket machine 1, the memory (MEM) for which CPU uses 76, and 77, and connecting 78 to an external device (or contact), and 79 are connectors (CN).

[0023] As an external device in this case, the communication terminal 2 grade of drawing 4 can be considered. Drawing 4 is drawing explaining the communication terminal of an example by the gestalt of operation, and it sets to drawing. 2 The body of a communication terminal, 81 a receiver (RV) and 83 for a hand set (HS) and 82 A microphone (MC), A console (CSL) and 85 84 A liquid crystal display (DSP), The keyboard (KBD) with which 86 contains a dialing key etc., the baseband processing section in which 87 processes a sound signal (BB), A circuit a codec (CDC) in case 88 is a digital communication method, and 89 The communications control section (CIF), The input/output interface (IOIF) by the electrical and electric equipment or light in the case of connecting to the common bus of CPU CPU to which 90 performs a modem (MDM) and 91 performs main control of a communication terminal 2, the memory (MEM) for which CPU uses 92, and 93, and connecting 94 to an external device, and 95 are connectors (CN).

[0024] As an external device in this case, the pocket machine 1 and automatic-vending-machine 5 grade of drawing 3 can be considered. However, when connecting with both, it has two or more input/output interfaces 4. Drawing 5 is drawing explaining the communication link actuation by the gestalt of the 1st operation. User a visits at the user's b-ed store with the pocket machine 1. If you buy goods, it will become the phase of tariff payment. User a does dial call origination to the specific telephone number (telephone number which can receive this service) of a financial institution 3 with the pocket machine 1.

[0025] The specific telephone number of a correspondent bank a is used as abbreviated dialing desirable beforehand, for example, and call origination is carried out by this abbreviated dialing. Or an exclusive key like a "payment key" is prepared in the console side of the pocket machine 1, and automatic call origination is carried out to a correspondent bank a by pressing this key. Moreover, if , on the occasion of call origination, User's a personal identification number is keyed beforehand. User's a ID information (namely, thing which attached the personal identification number which User a inputted into the subscriber's number or this subscriber's number of the pocket machine 1) is included in the call origination signal of the pocket machine 1.

[0026] User a notifies a financial institution 3 of the user's b-ed (namely, communication terminal 2) ID information by a dialing key etc. after call connection. It is satisfactory even if User a gets to know it, since the user's b-ed ID information is the account information on a transfer place. In addition, when a communication terminal 2 is equipped with the connection interface 94, where a communication terminal 2 is contacted (wearing), call origination of the pocket machine 1 may be carried out. Preferably, if wearing to a communication terminal 2 is detected, call origination of the pocket machine 1 will be carried out automatically. In this case, a correspondent bank a is automatically notified of the user's b-ed ID information after call connection in a correspondent bank a through the connection interface 94 of a communication terminal 2, and the connection interface 78 of the pocket machine 1.

[0027] Or where a communication terminal 2 is contacted (wearing), call origination of the pocket machine 1 may be carried out to a correspondent bank b from a communication terminal 2. Preferably, if wearing of the pocket machine 1 is detected, call origination of the communication terminal 2 will be carried out automatically. In this case, a correspondent bank b is automatically notified of User's a ID information after call connection in a correspondent bank b through the connection interface 78 of the pocket machine 1, and the connection interface 94 of a communication terminal 2.

[0028] Or call origination may be independently carried out from the pocket machine 1 and a



communication terminal 2, and each may notify a dealings partner's ID information. in the financial institution 3, each ID information of User a and the user b-ed was acquired by one call - or when the advice information on two independent calls has connected User a and the user b-ed mutually, it gets to know that business occurs among Both a and b.

[0029] A financial institution 3 specifies each account number based on each ID information of User a and the user b-ed. In this example, the account number a of User's a correspondent bank a and the account number b of the user's b-ed correspondent bank b are specified, and the imagination field of the business between Banks a and b is set up. In addition, setting out of a actual field may be performed in Bank a, it may carry out in Bank b, or you may carry out mutually among Banks a and b.

[0030] Furthermore, if a financial institution 3 (banks a and b) is required, it does call connection to a communication terminal 2 (or pocket machine 1) for the user's b-ed (or the user a) ID information, and it plans insurance of dealings. Moreover, if, the reason of call connection is notified to a communication terminal 2. The information about User's (payment side) a good/defect may be included in this advice. These advice data are sent by the indicative data or the audio guidance signal.

[0031] Then, the user b-ed transmits amount-of-money (tariff) information according to guidance of "please input the amount of money." Or amount-of-money information may be inputted also from User a, and you may collate in a financial institution 3. A financial institution 3 will perform close payment processing of a tariff between corresponding accounts, if amount-of-money information is checked. In this example, the amount of money is deducted from the account of the user a of Bank a, and this amount of money is transferred to the account of the user b of Bank b. Or close payment processing may be recorded for the time being in Banks a and b, and actual close payment processing may be performed on the date of assignment of the back. And User a and the user b-ed are notified of that.

[0032] User a and the user b-ed cut a call, and business ends them. And User a uses goods as a hand and opens a store. in addition -- referring for the utilization tariff of the periods (the degree of moon etc.) which are supposing that it is more nearly accessible than the pocket machine 1 in the database of a financial institution 3 in the above-mentioned case \*\*\*\* -- or commitment -- being based -- payment in installments -- disagreeable -- payment conditions, such as a bonus lump sum payment, can be specified now. Moreover, it is also possible to refuse payment as limit over from the direction of a financial institution 3.

[0033] In order to offer such various services efficiently, various services are menu-ized beforehand in the financial institution 3, and User a chooses the menu displayed on the pocket machine 1, and uses various services efficiently with the input means of dedication which advanced processing by the interactive mode among financial institutions 3, or connected with the pocket machine 1. Moreover, when holding call origination or account enquiry with the above-mentioned pocket machine 1, the personal identification number which User a inputted may be contained in User's a ID information, but if a personal identification number is intercepted, it becomes disadvantageous [ User a ].

[0034] In this case, the RSA cryptograph of a public key system etc. can be used, for example. That is, the cryptographic key and initial value which change with the pocket machine 1 first each time are received, and by transmitting the password information enciphered by it, even if monitored, it becomes possible to raise safety. Moreover, by the private key method, although a private key method may be used, since User a has held the key beforehand, when it transmits as it is, there is a possibility that it may be monitored the whole cipher and may be abused. In this

case, it can be coped with by encryption by the output-feedback (OFB) method which changes initial value.

[0035] Next, actuation of an example in a superstore is explained. User a puts two or more goods into a tray, goes to a register (POS machine), equips a POS machine with the pocket machine 1, and does call origination from the communication terminal 2 of the pocket machine 1 or a POS machine. On the other hand, a salesclerk reads the bar code of each goods and presses the total key of a POS machine. A financial institution 3 is notified of the total amount of money by this, and close payment processing is carried out.

[0036] Next, actuation when a communication terminal 2 is included in the automatic vending machines 5, such as tobacco, juice, and a ticket, is explained. User a does call origination to a financial institution 3 in front of an automatic vending machine 5, and notifies ID information written by the automatic vending machine 5. Or an automatic vending machine 5 is equipped with the pocket machine 1, and call origination is carried out from the communication terminal 2 of the pocket machine 1 or an automatic vending machine 5.

[0037] A financial institution 3 transmits a sale enabling signal to an automatic vending machine 5 by having obtained specification of business, and the conventional cash will be injected an automatic vending machine 5 by this. And if User a performs selection actuation of goods, the goods concerned will be outputted and combined and advice of the amount of money will be performed to a financial institution 3 from a communication terminal 2. Or if there is advice of the close payment processing from a financial institution 3, an automatic vending machine 5 will output goods.

[0038] Even if such a cashless payment system does not carry out special infrastructure development, it is easily realizable only by assigning ID information to the existing POS machine, or incorporating the easy communication terminal 2 for the existing automatic vending machine. In this case, ID information may be assigned every POS machine and automatic vending machine 5, or may hold two or more POS machines and automatic vending machines in LAN, and may assign ID information (namely, the user's b-ed common transfer previous application post) common to them.

[0039] By the way, push-button phone-type telephone is sufficient as the user's b-ed communication terminal 2. In this case, after receiving a message from a financial institution 3 to telephone 2, according to voice guidance of "please input the amount of money", the user b-ed inputs the amount of money (for example, "\*10000#") by the dialing key. If, the user's b-ed personal identification number can also be inputted by the dialing key.

[0040] moreover, when the user's b-ed communication terminal 2 is dial type telephone, or in [\*\*\*\*] the user's b-ed selling door to door to User's a \*\* or acting to User a as a street scam in the street Since it does not have the suitable communication terminal 2, the user b-ed can perform advice of the call origination to a financial institution 3, advice of the user's b-ed ID information metallurgy frame, guidance of user a / user-ed b HE, close payment processing, etc. through User's a pocket machine 1.

[0041] Moreover, a credit service firm may process the above-mentioned correspondent banks a and b. Actual close payment processing is performed among Banks a and b like the conventional credit service after dealings termination on the appointed date. Drawing 6 is drawing showing the system configuration by the gestalt of the 2nd operation, and this drawing shows the example of application to time amount meter-rate system service.

[0042] As time amount meter-rate system service, recreation halls, such as a motor pool, tennis, and a game, etc. can be considered. The communication terminal 2 in this case is included in the

gate machine and game machine of a motor pool. Drawing 7 is drawing explaining the communication link actuation by the gestalt of the 2nd operation. Here, the example of application to the gate machine of a motor pool is explained. User a does call origination to a financial institution 3 in front of the gate machine of a motor pool, and notifies ID information written by the gate machine. Or a gate machine is equipped with the pocket machine 1, and call origination is carried out from the communication terminal 2 of the pocket machine 1 or a gate machine. In that case, if, the purport of the beginning of using is notified. A financial institution 3 will notify that to a communication terminal 2, if the field of dealings is set up. Thereby, if a gate machine is required, it publishes a parking ticket, and it opens the gate. And it becomes accounting initiation of the time amount meter-rate system in a gate machine side or a financial institution 3 side.

[0043] Although the call may be held after that, the cut direction is desirable from the point of a deployment of a communication resource. When a call is cut, and coming out of a motor pool, call connection is carried out to a financial institution 3 like the time of said beginning of using. If after call connection, the purport of activity termination is notified. Moreover, when the call is held, the purport of activity termination is only notified.

[0044] A gate machine or a financial institution 3 computes a tariff based on the time subtraction at the time of accounting initiation and accounting termination. And close payment processing of this tariff is performed and that is notified to the pocket machine 1 and a communication terminal 2. In addition, with service of the type which generally does not cut a call, the method (for example, call-based system method) which a communication link carrier charges can be used instead of establishing the above-mentioned time amount connection time based fee accounting means.

[0045] Drawing 8 is drawing showing the system configuration by the gestalt of the 3rd operation, and this drawing shows the example of application to distance meter-rate system service. As distance meter-rate system service, it can think of a highway, a bus, a railroad, etc. The communication terminal 2 in this case is included in the gate machine and bus of a highway, or the automatic ticket gate of a railroad. Drawing 9 is drawing explaining the communication link actuation by the gestalt of the 3rd operation.

[0046] Here, the case of a toll road is explained and 4 is a total center performed by concentrating the accounting of the distance meter-rate system. User a does call origination to the total center 4 near the inlet-port gate, and notifies ID information written by the inlet-port gate. Or the pocket machine 1 is inserted in the gate machine of an inlet port, and call origination is carried out from the communication terminal 2 of the pocket machine 1 or a gate machine.

[0047] If it asks a financial institution 3 for User's a ID information if the total center 4 is required, and there is no trouble about payment, it will set up the field of dealings between both ID information, and will notify the purport of opening of the gate to the communication terminal 2 of the inlet-port gate. Thereby, if a gate machine is required, it publishes a transit ticket, and it opens the inlet-port gate. On the other hand, in the total center 4 side, it becomes accounting initiation of the distance meter-rate system. Since it is the call origination from the inlet-port gate, the purport of accounting initiation is obvious. Then, a call is cut.

[0048] User a does call origination to the total center 4 near the outlet gate, and notifies ID information written by the outlet gate. Or the pocket machine 1 is inserted in the gate machine of an outlet, and call origination is carried out from the communication terminal 2 of the pocket machine 1 or the outlet gate. The total center 4 sets up the field of dealings based on both ID information. Furthermore, each quotient setting out in the inlet-port gate and the outlet gate is

connected using User's a ID information. Since it is the call origination from the outlet gate this time, the purport of accounting termination is obvious.

[0049] In the total center 4 side, a tariff is computed based on a part for the range difference at the time of accounting initiation and accounting termination. If, a financial institution 3 is notified of a tariff and close payment processing is performed. And that is notified to the communication terminal 2 of the pocket machine 1 and the outlet gate, and this opens the gate of the gate machine of an outlet. In addition, in the case of the toll road of tariff regularity, accounting of the fixed amount may be carried out and the gate of it may be opened after that at the inlet-port gate.

[0050] Drawing 10 is drawing showing the system configuration by the gestalt of the 4th operation, and 2a and 2b are the wireless terminals which added the radiocommunication function to each at the communication terminal of drawing 4 in drawing. The wireless terminal 2 is equipped with the radiocommunication functions (for example, the cordless handset in PHS between call function etc.) in which the pocket machine 1 and a direct interface are possible, and User a becomes accessible in a financial institution 3 or the total center 4 through the wireless terminal 2, without minding a public network.

[0051] Here, the case of a toll road is explained. Wireless terminal 2a is carrying out firm output of the broadcast-connection request by the control carrier etc., and if User a approaches the inlet-port gate, he will return an arrival-of-the-mail response to wireless terminal 2a, and will shift to a communication link carrier. Then, User a does call origination to the total center 4 near the inlet port of the gate, and notifies ID information written by the inlet-port gate.

[0052] Or the pocket machine 1 in this case can notify User's a ID information to wireless terminal 2a by non-contact, and wireless terminal 2a may carry out call origination of after this advice to the total center 4. Subsequent processing is the same as that of the above, and is good. Moreover, the same is said of the processing in the outlet gate. In addition, although the gestalt of two or more suitable operations for above-mentioned this invention was described, within limits which do not deviate from this invention thought, a configuration and control are performed and various change of these combination cannot be made also until it says.

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## DESCRIPTION OF DRAWINGS

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[Brief Description of the Drawings]

[Drawing 1] Drawing 1 is drawing explaining the principle of this invention.

[Drawing 2] Drawing 2 is drawing showing the system configuration by the gestalt of the 1st operation.

[Drawing 3] Drawing 3 is drawing explaining the pocket machine of an example by the gestalt of operation.

[Drawing 4] Drawing 4 is drawing explaining the communication terminal of an example by the gestalt of operation.

[Drawing 5] Drawing 5 is drawing explaining the communication link actuation by the gestalt of the 1st operation.

[Drawing 6] Drawing 6 is drawing showing the system configuration by the gestalt of the 2nd operation.

[Drawing 7] Drawing 7 is drawing explaining the communication link actuation by the gestalt of the 2nd operation.

[Drawing 8] Drawing 8 is drawing showing the system configuration by the gestalt of the 3rd

operation.

[Drawing 9] Drawing 9 is drawing explaining the communication link actuation by the gestalt of the 3rd operation.

[Drawing 10] Drawing 10 is drawing showing the system configuration by the gestalt of the 4th operation.

[Description of Notations]

1 Pocket Machine

2 Communication Terminal

3 Financial Institution

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[Translation done.]

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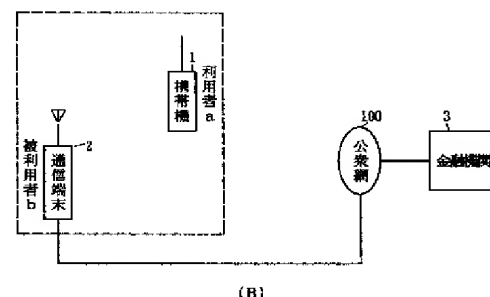
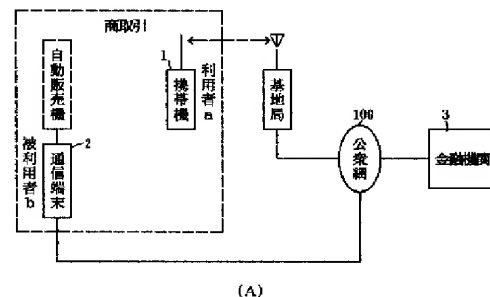
(54)【発明の名称】 キャッシュレスシステム及び該システムで使用する携帯機

(57)【要約】 (修正有)

【課題】 単一の通信端末であらゆる料金の支払にキャッシュレスで対応できるようにする。

【解決手段】 利用者aはID情報を送信可能な携帯機1により金融機関3に発呼し、金融機関は利用者のID情報及び取引に係る情報に基づき各対応する口座間で入出金に係る処理を行う(A)。又は、利用者bは携帯機1により通信端末装置2と接続し、接続後に、携帯機又は通信端末装置より金融機関に発呼し、利用者aのID情報及び取引に係る情報を通知し、金融機関は利用者aのID情報及び取引に係る情報に基づき各対応する口座間で入出金に係る処理を行う(B)。

本発明の原理を説明する図



**【特許請求の範囲】**

**【請求項1】** 対価を支払う利用者と対価の支払を受ける被利用者との間の取引をキャッシュレスで実現するキャッシュレスシステムにおいて、

利用者のID情報を送信可能な携帯機と、

ID情報に対応する口座情報を備える金融機関と、  
携帯機及び金融機関を収容する公衆通信網とを備え、  
利用者は携帯機により金融機関に発呼し、該呼の接続後に取引に係る情報を送信し、  
金融機関は利用者のID情報及び取引に係る情報に基づき各対応する口座間で入出金に係る処理を行うことを特徴とするキャッシュレスシステム。

**【請求項2】** 公衆通信網に収容され、かつ被利用者のID情報により着信する通信端末装置を備え、  
利用者は携帯機により金融機関に発呼し、該呼の接続後に被利用者のID情報を通知し、

金融機関は被利用者のID情報で通信端末装置に呼接続すると共に、利用者及び被利用者の各ID情報に基づき対応する口座間で取引の場を設定し、その後の利用者又は被利用者からの金額情報に従い各対応する口座間で入出金に係る処理を行うことを特徴とする請求項1のキャッシュレスシステム。

**【請求項3】** 対価を支払う利用者と対価の支払を受ける被利用者との間の取引をキャッシュレスで実現するキャッシュレスシステムにおいて、

利用者のID情報を送信可能な携帯機と、

携帯機と無線接続可能な通信端末装置と、

ID情報に対応する口座情報を備える金融機関と、  
通信端末装置及び金融機関を収容する公衆通信網とを備え、

利用者は携帯機により通信端末装置と接続し、  
該接続後に、携帯機又は通信端末装置より金融機関に発呼し、該呼の接続後に利用者のID情報及び取引に係る情報を通知し、

金融機関は利用者のID情報及び取引に係る情報に基づき各対応する口座間で入出金に係る処理を行うことを特徴とするキャッシュレスシステム。

**【請求項4】** 被利用者又は金融機関の側に時間従量制サービスに基づく時間課金手段を備え、

金融機関は時間課金手段の出力の金額情報に従い各対応する口座間で入出金に係る処理を行うことを特徴とする請求項2及び3のキャッシュレスシステム。

**【請求項5】** 被利用者又は金融機関の側に距離従量制サービスに基づく距離課金手段を備え、

金融機関は距離課金手段の出力の金額情報に従い各対応する口座間で入出金に係る処理を行うことを特徴とする請求項2及び3のキャッシュレスシステム。

**【請求項6】** 請求項1及び3のキャッシュレスシステムで使用する携帯機において、

金融機関において利用者の口座情報に変換されるID番

号の一部又は全部を自己の加入者番号とすることを特徴とする携帯機。

**【発明の詳細な説明】****【0001】**

**【発明の属する技術分野】** 本発明はキャッシュレスシステム及び該システムで使用する携帯機に関し、更に詳しくは対価を支払う利用者と対価の支払を受ける被利用者との間の取引をキャッシュレスで実現するキャッシュレスシステム及び該システムで使用する携帯機に関する。

**【0002】** 今日、対価を伴う取引は多様化しており、商品、チケットの購入、医療や理髪等のサービスを受けた時、駐車場やゲーム機等の時間従量制サービス又は有料道路等の距離従量制サービスを受けた時等には、その都度現金又はそれに準ずるもの（手形、小切手、カード等を含む）の手渡しや挿入接触を必要とする。

**【0003】**

**【従来の技術】** 従来は、商品の購入時や飲食の支払時等にクレジットカードシステムを利用できる。しかし、クレジットカードシステムでは現金払いに比べて幾分手続きに時間がかかる上、利用者、被利用者共にも何時でも現金払い程の信頼感が得られるわけではない。

**【0004】** 更には、被利用者の側にカード払いの受入れ体制を必要とし、カードを使える場所に制限がある。なお、この点は各種カードを所持することも考えられるが、管理が煩雑となり、紛失、不正使用の危険性も増す。また、従来は、テレホンカード、JR（登録商標）カード等があり、これらは機械的に支払処理されるので使い勝手が良い。

**【0005】** しかし、利用者は使用目的毎に別のカードを購入する必要がある、結局は現金による支払いとあまり変わらない。一方、被利用者の側ではカードの機械処理のためのインフラ（カード電話機、切符販売機等）を整備する必要がある、その普及には自ずと制限がある。

**【0006】**

**【発明が解決しようとする課題】** 従って、従来は、バス、タクシー、駐車場、ゲームやパチンコ等の遊技場、有料道路等の多くの分野でキャッシュレス化が進んでいないのが現状である。本発明の目的は、別段のインフラ整備を必要とせず、単一の通信端末であらゆる料金の支払にキャッシュレスで対応できるキャッシュレスシステム及び該システムで使用する携帯機を提供することにある。

**【0007】**

**【課題を解決するための手段】** 上記の課題は図1（A）の構成により解決される。即ち、本発明（1）のキャッシュレスシステムは、対価を支払う利用者と対価の支払を受ける被利用者との間の取引をキャッシュレスで実現するキャッシュレスシステムにおいて、利用者aのID情報を送信可能な携帯機1と、ID情報に対応する口座情報を備える金融機関3と、携帯機1及び金融機関3を

収容する公衆通信網100とを備え、利用者aは携帯機1により金融機関3に発呼し、該呼の接続後に取引に係る情報を送信し、金融機関3は利用者aのID情報及び取引に係る情報に基づき各対応する口座間で入出金に係る処理を行うものである。

【0008】例えば、商品の飛び込みセールスやマッサージの出張サービス等では被利用者bが通信端末2を持っていない場合が少なくない。かかる場合でも、利用者aが携帯機1を持っていればその場で金融機関3にアクセスできる。そして、携帯機1により利用者aのID情報を送信し、引き続き、取引に係る情報（即ち、被利用者（振込先）bのID情報又は口座番号、及び金額情報等）を送信する。被利用者bのID情報や口座番号は秘密ではないので利用者aが送信操作しても問題は無い。

【0009】金融機関3は利用者aのID情報に基づき支払側の口座番号を特定し、かつ被利用者bのID情報又は口座番号により両者a、b間に取引が有ることを特定する。そして、これに基づき対応する口座間で入出金に係る処理を行う。この場合に、金融機関3が取引銀行の場合は直接に入出金処理を行う。また、金融機関3がクレジットサービス会社のような場合はとりあえず入出金に係る記録処理を行い、後に取引銀行間で入出金処理を行う。

【0010】従って、本発明（1）によれば、別段のインフラ整備を行わなくても、利用者aの携帯機1により、あらゆる場合の料金支払にキャッシュレスで対応できる。この場合に、好ましくは、利用者aのID情報は携帯機1の加入者番号又は該加入者番号に暗証番号を付加した情報である。公衆通信網100に接続する携帯機1には、通信業者を問わず、公衆網全体で唯一の加入者番号が割り当てられるので、各人が夫々に携帯機1を専有する状況下では、加入者番号はクレジットカード等の口座番号等に代わり、利用者aを特定する有効なID情報と成り得る。

【0011】また、利用者aのID情報として携帯機1の加入者番号に暗証番号を付加すれば、携帯機1を複数人で利用できる上、各人の口座保護が得られる。また好ましくは、携帯機1は利用者aのID情報を発呼信号に載せて送信する。利用者aのID情報を発呼信号に載せて送信すれば、既存の携帯機の通信プロトコルに別段の変更を要しない。

【0012】また、本発明（2）においては、公衆通信網100に収容され、かつ被利用者bのID情報により着信する通信端末装置2を備え、利用者aは携帯機1により金融機関3に発呼し、該呼の接続後に被利用者bのID情報を通知し、金融機関3は被利用者bのID情報で通信端末装置2に呼接続すると共に、利用者a及び被利用者bの各ID情報に基づき対応する口座間で取引の場を設定し、その後の利用者a又は被利用者bからの金額情報に従い各対応する口座間で入出金に係る処理を行

う。

【0013】被利用者bの店やオフィスで取引をする場合は、被利用者bも通信端末装置（-pushホンやPOS機等）2を備える。この場合は、金融機関3は被利用者bのID情報で通信端末装置2に呼接続するとで、取引の安全（確認）が図れる。また、利用者a及び被利用者bをID情報（加入者番号等）で処理できるので、システムを簡潔に運用できる。

【0014】また上記の課題は図1（B）の構成により解決される。即ち、本発明（3）のキャッシュレスシステムは、対価を支払う利用者と対価の支払を受ける被利用者との間の取引をキャッシュレスで実現するキャッシュレスシステムにおいて、利用者aのID情報を送信可能な携帯機と、携帯機1と無線接続可能な通信端末装置2と、ID情報に対応する口座情報を備える金融機関3と、通信端末装置2及び金融機関3を収容する公衆通信網100とを備え、利用者aは携帯機1により通信端末装置2と接続し、該接続後に、携帯機1又は通信端末装置2より金融機関3に発呼し、該呼の接続後に利用者aのID情報及び取引に係る情報を通知し、金融機関3は利用者aのID情報及び取引に係る情報に基づき各対応する口座間で入出金に係る処理を行うものである。

【0015】この場合の携帯機1は、公衆網100にアクセス可能な携帯機でも良いが、通信端末装置2にのみ無線接続可能な携帯機でも良い。このような携帯機1は小型かつ安価に実現できる。また、この場合の携帯機1は通信端末装置2に接続するので、利用者aはその先の区間の通信料金を支払う必要が無い。好ましくは、図1（A）又は（B）において、通信端末装置2は商品又はチケット等の自動販売機と連動している。従って、自動販売機でもキャッシュレスで商品やチケットを購入できる。

【0016】また、本発明（4）においては、被利用者b又は金融機関3の側に時間従量制サービスに基づく時間課金手段を備え、金融機関3は時間課金手段の出力の金額情報に従い各対応する口座間で入出金に係る処理を行う。従って、駐車場やテニスコート等もキャッシュレスで使用できる。また、本発明（5）においては、被利用者b又は金融機関3の側に距離従量制サービスに基づく距離課金手段を備え、金融機関3は距離課金手段の出力の金額情報に従い各対応する口座間で入出金に係る処理を行う。

【0017】従って、有料道路もキャッシュレスで使用できる。好ましくは、通信端末装置2は課金の開始時及び終了時に金融機関3に呼接続する。従って、通信資源の有効利用となる。また好ましくは、課金手段は通信事業者が備える。課金開始から課金終了まで呼接続するような用途では、通信事業者の課金手段（例えばダイヤルQ<sup>2</sup>（登録商標）方式）を有効に利用できる。

【0018】また上記の課題は図1（A）、（B）の構



成により解決される。即ち、本発明(6)の携帯機は、本発明(1)及び(3)のキャッシュレスシステムで使用する携帯機1において、金融機関3において利用者の口座情報に変換されるID番号の一部又は全部を自己の加入者番号とするものである。従って、このような携帯機は広範囲なキャッシュレスサービスシステムで共通に使用できる。

#### 【0019】

【発明の実施の形態】以下、添付図面に従って本発明に好適なる複数の実施の形態を詳細に説明する。なお、全図を通して同一符号は同一又は相当部分を示すものとする。図2は第1の実施の形態によるシステム構成を示す図で、該図は店やオフィスにおける商取引への適用例を示している。

【0020】図において、1は携帯機(携帯電話機その他の携帯無線端末装置)、2は有線/無線による通信端末装置、3は金融機関である。本システムには複数の事業者A、Bによる網A、Bが存在し、該網A、Bは関門交換局を介して相互に接続している。網A、Bの全体を公衆網とも呼ぶ。例えば、携帯機1は網Aの基地局に収容され、通信端末2は網Bの端局に収容されている。なお、通信端末2は携帯式の無線端末装置でも良い。

【0021】本システムにおける金融機関3には、利用者a、被利用者bが夫々取引する銀行a、bやクレジットサービス会社等が含まれる。金融機関3は携帯機1の加入者番号又は該加入者番号に暗証番号を付加した情報を携帯機1(即ち、利用者a)のID情報として登録しており、このID情報は利用者aの口座番号(銀行名、店名、口座種別等を含む)に対応付けられる。被利用者bの通信端末2についても同様である。

【0022】図3は実施の形態による一例の携帯機を説明する図で、図において1は携帯機の本体、61は前面のコンソール(CSL)、62はレシーバ(RV)、63はマイク(MC)、64は液晶ディスプレイ(DSP)、65はダイヤルキー等を含むキーボード(KBD)、66は音声信号を処理するベースバンド処理部(BB)、67はデジタル携帯機の場合のコーデック(CDC)、68は例えばTDM方式による通信制御部、69は例えば $\pi/4$ QPSK変調方式による送信部、70は送/受信切替スイッチ(TR)、71はアンテナ、72は $\pi/4$ QPSK復調方式による受信部、73は受信レベルの測定部(RSSIDT)、74は周波数シンセサイザ、75は携帯機1の主制御を行うCPU、76はCPUが使用するメモリ(MEM)、77はCPUの共通バス、78は外部装置に接続(又は接触)する場合の電気又は光による入出力インタフェース(IOIF)、79はコネクタ(CN)である。

【0023】この場合の外部装置としては、図4の通信端末2等が考えられる。図4は実施の形態による一例の通信端末装置を説明する図で、図において2は通信端末

装置の本体、81はハンドセット(HS)、82はレシーバ(RV)、83はマイク(MC)、84はコンソール(CSL)、85は液晶ディスプレイ(DSP)、86はダイヤルキー等を含むキーボード(KBD)、87は音声信号を処理するベースバンド処理部(BB)、88は回線がデジタル通信方式の場合のコーデック(CDC)、89は通信制御部(CIF)、90はモデム(MDM)、91は通信端末装置2の主制御を行うCPU、92はCPUが使用するメモリ(MEM)、93はCPUの共通バス、94は外部装置に接続する場合の電気又は光による入出力インタフェース(IOIF)、95はコネクタ(CN)である。

【0024】この場合の外部装置としては、図3の携帯機1や自動販売機5等が考えられる。但し、両者に接続する場合は複数の入出力インタフェース4を備える。図5は第1の実施の形態による通信動作を説明する図である。利用者aは携帯機1を持って被利用者bの店に訪れる。商品を買うと料金支払いの段階になる。利用者aは携帯機1で金融機関3の特定の電話番号(本サービスを受けられる電話番号)にダイヤル発呼する。

【0025】好ましくは、予め例えば取引銀行aの特定の電話番号を短縮ダイヤルにしておき、該短縮ダイヤルで発呼する。又は携帯機1のコンソール面に「支払キー」のような専用キーを設けておき、該キーを押すことで取引銀行aに自動発呼する。また、必要なら、発呼に際して予め利用者aの暗証番号をキー入力しておく。携帯機1の発呼信号には利用者aのID情報(即ち、携帯機1の加入者番号又は該加入者番号に利用者aの入力した暗証番号を付したもの)が含まれる。

【0026】金融機関3に呼接続後、利用者aは被利用者b(即ち、通信端末2)のID情報をダイヤルキー等で通知する。被利用者bのID情報は振込先の口座情報であるから、利用者aが知っても問題は無い。なお、通信端末2が接続インタフェース94を備える場合は、携帯機1を通信端末2に接触(装着)した状態で発呼しても良い。好ましくは、携帯機1は通信端末2への装着を検出すると自動的に発呼する。この場合は、取引銀行aに呼接続後、被利用者bのID情報が通信端末2の接続インタフェース94及び携帯機1の接続インタフェース78を介して自動的に取引銀行aに通知される。

【0027】又は、携帯機1を通信端末2に接触(装着)した状態で通信端末2から取引銀行bに発呼しても良い。好ましくは、通信端末2は携帯機1の装着を検出すると自動的に発呼する。この場合は、取引銀行bに呼接続後、利用者aのID情報が携帯機1の接続インタフェース78及び通信端末2の接続インタフェース94を介して自動的に取引銀行bに通知される。

【0028】又は、携帯機1及び通信端末2から別々に発呼し、夫々が取引相手のID情報を通知しても良い。金融機関3では、1つの呼で利用者a及び被利用者bの

各ID情報が得られたことにより、又は2つの独立した呼の通知情報が利用者a及び被利用者bを相互に関係付けていることにより、両者a、bの間で商取引があることを知る。

【0029】金融機関3は利用者a及び被利用者bの各ID情報に基づき夫々の口座番号を特定する。この例では、利用者aの取引銀行aの口座番号aと、被利用者bの取引銀行bの口座番号bとが特定され、銀行a、b間における商取引の仮想的な場が設定される。なお、実際の場の設定は銀行aで行っても、銀行bで行っても、又は銀行a、b間で相互に行っても良い。

【0030】更に、金融機関3（銀行a又はb）は、必要なら被利用者b（又は利用者a）のID情報で通信端末2（又は携帯機1）に呼接続し、取引の安全を図る。また、必要なら通信端末2に呼接続の理由を通知する。この通知には利用者（支払側）aの良／不良等に関する情報が含まれていても良い。該通知データは表示データ又は音声のガイダンス信号により送られる。

【0031】その後、被利用者bは「金額を入力して下さい」のガイダンスに従って金額（料金）情報を送信する。又は、利用者aからも金額情報を入力し、金融機関3で照合してもよい。金融機関3は、金額情報が確認されると、対応する口座間で料金の入出金処理を行う。この例では、銀行aの利用者aの口座から金額を差し引き、同金額を銀行bの利用者bの口座に振り込む。又は、とりあえず銀行a又はbで入出金処理の記録を行い、後の指定の期日に実際の入出金処理を行ってもよい。そして、その旨を利用者a及び被利用者bに通知する。

【0032】利用者a及び被利用者bは呼を切断し、商取引が終了する。そして、利用者aは商品を手にし、店を出る。なお、上記の場合に、携帯機1より金融機関3のデータベースにアクセス可能とすることである期間（月度等）の利用料金を照会したり、又は売買契約に基づき分割払いやボーナス一括払い等の支払条件を指定したりできるようになっている。また、金融機関3の方から限度額オーバーとして支払いを拒絶することも可能である。

【0033】このような各種サービスを効率よく提供するには、予め金融機関3で各種サービスをメニュー化しておき、利用者aは携帯機1に表示されたメニューを選択し、金融機関3との間で対話型で処理を進めるか、又は携帯機1に接続した専用の入力手段で各種サービスを効率よく利用する。また、上記携帯機1で発呼又は口座照会を行う場合は、利用者aのID情報に利用者aの入力した暗証番号が含まれる場合もあるが、もし暗証番号が盗聴されると、利用者aの不利益となる。

【0034】この場合は、例えば公開鍵方式のRSA暗号等を利用できる。即ち、先ず携帯機1で毎回変わる暗号鍵や初期値を受信し、それによって暗号化した暗証情

報を送信することで、傍受されても安全性を高めることが可能となる。また、秘密鍵方式を利用しても良いが、秘密鍵方式では、その鍵を予め利用者aが保持しているため、そのまま送信すると暗号文ごと傍受され、悪用されるおそれがある。この場合は、初期値が変わる出力フィードバック（OFB）方式による暗号化で対処できる。

【0035】次に、スーパーストアにおける一例の操作を説明する。利用者aは複数の商品をトレイに入れてレジ（POS機）に行き、携帯機1をPOS機に装着して、携帯機1又はPOS機の通信端末2より発呼する。一方、店員は各商品のバーコードを読み取り、POS機のトータルキーを押す。これにより金融機関3に合計金額が通知され、入出金処理される。

【0036】次に、通信端末2がタバコ、ジュース、チケット等の自動販売機5に組み込まれた場合の操作を説明する。利用者aは自動販売機5の前で金融機関3に発呼し、自動販売機5に表記されているID情報を通知する。又は携帯機1を自動販売機5に装着し、携帯機1又は自動販売機5の通信端末2より発呼する。

【0037】金融機関3は、商取引の特定が得られたことにより、自動販売機5に販売許可信号を送信し、これにより自動販売機5は従来の現金を投入した状態になる。そして、利用者aが商品の選択操作を行うと、当該商品を出力し、併せて通信端末2から金融機関3に金額の通知が行われる。又は、金融機関3からの入出金処理の通知があると、自動販売機5は商品を出力する。

【0038】このようなキャッシュレスシステムは別段のインフラ整備をしなくても、既存のPOS機にID情報を割り付け、又は既存の自動販売機に簡単な通信端末2を組み込むだけで容易に実現できる。この場合に、ID情報はPOS機や自動販売機5毎に割り付けても良いし、又は複数のPOS機や自動販売機をLANに収容して、それらに共通のID情報（即ち、被利用者bの共通の振込先口座）を割り付けても良い。

【0039】ところで、被利用者bの通信端末2はプッシュフォン式の電話機でも良い。この場合は、金融機関3から電話機2への着信後、「金額を入力して下さい」の音声ガイダンスに従って、被利用者bはダイヤルキーにより金額（例えば「\*10000#」）を入力する。必要なら、ダイヤルキーにより被利用者bの暗証番号も入力できる。

【0040】また、被利用者bの通信端末2がダイヤル式電話機の場合、又は被利用者bが利用者aの宅に訪問販売し、又は街頭で利用者aにキャッチセールスするような場合には、被利用者bは適当な通信端末2を持たないので、金融機関3への発呼、被利用者bのID情報や金額の通知、利用者a／被利用者bへのガイダンス、及び入出金処理等の通知は、利用者aの携帯機1を介して行える。

【0041】また、上記取引銀行a、bの処理をクレジットサービス会社が行っても良い。取引終了後は、従来のクレジットサービスと同様に、指定の期日に銀行a、b間で実際の入出金処理が行われる。図6は第2の実施の形態によるシステム構成を示す図で、該図は時間従量制サービスへの適用例を示している。

【0042】時間従量制サービスとしては、駐車場、テニスやゲーム等の遊戯場等が考えられる。この場合の通信端末2は駐車場のゲート機やゲーム機に組み込まれる。図7は第2の実施の形態による通信動作を説明する図である。ここでは駐車場のゲート機への適用例を説明する。利用者aは駐車場のゲート機の前で金融機関3に発呼し、ゲート機に表記されているID情報を通知する。又は携帯機1をゲート機に装着し、携帯機1又はゲート機の通信端末2より発呼する。その際には、必要なら使用開始の旨を通知する。金融機関3は取引の場を設定すると、その旨を通信端末2に通知する。これによりゲート機は、必要なら駐車券を発行し、ゲートを開く。そして、ゲート機又は金融機関3の側で時間従量制の課金開始となる。

【0043】その後は、呼を保持していても良いが、切断した方が通信資源の有効利用の点から望ましい。呼を切断した場合は、駐車場を出る時に前記使用開始時と同様にして金融機関3に呼接続する。呼接続後に、必要なら使用終了の旨を通知する。また、呼を保持していた場合は、単に使用終了の旨を通知する。

【0044】ゲート機又は金融機関3は課金開始時と課金終了時の時間差分に基づき、料金を算出する。そして、該料金の入出金処理を行い、その旨を携帯機1及び通信端末2に通知する。なお、一般に呼を切断しないタイプのサービスでは、上記時間従量制課金手段を設ける代わりに、通信キャリアが課金する方式（例えばダイヤルQ<sup>®</sup>方式）を利用できる。

【0045】図8は第3の実施の形態によるシステム構成を示す図で、該図は距離従量制サービスへの適用例を示している。距離従量制サービスとしては高速道路、バス、鉄道等が考えられる。この場合の通信端末2は高速道路のゲート機やバスや鉄道の自動改札機に組み込まれる。図9は第3の実施の形態による通信動作を説明する図である。

【0046】ここでは、有料道路の場合を説明し、4は距離従量制の課金処理を集中して行う集計センタである。利用者aは入口ゲートの付近で集計センタ4に発呼し、入口ゲートに表記されているID情報を通知する。又は携帯機1を入口のゲート機に挿入し、携帯機1又はゲート機の通信端末2より発呼する。

【0047】集計センタ4は、必要なら利用者aのID情報で金融機関3に問い合わせを行い、支払いについて支障が無ければ両ID情報間で取引の場を設定し、入口ゲートの通信端末2に開門の旨を通知する。これにより

ゲート機は、必要なら走行券を発行し、入口ゲートを開く。一方、集計センタ4の側では距離従量制の課金開始となる。入口ゲートからの発呼であるから、課金開始の旨は自明である。その後、呼を切断する。

【0048】利用者aは出口ゲートの付近で集計センタ4に発呼し、出口ゲートに表記されているID情報を通知する。又は携帯機1を出口のゲート機に挿入し、携帯機1又は出口ゲートの通信端末2より発呼する。集計センタ4は、両ID情報に基づき取引の場を設定する。更に、利用者aのID情報により入口ゲートと出口ゲートにおける各商設定を関係付ける。今回は、出口ゲートからの発呼であるから、課金終了の旨は自明である。

【0049】集計センタ4の側では課金開始時と課金終了時の距離差分に基づき、料金を算出する。必要なら、金融機関3に料金を通知し、入出金処理を行う。そして、その旨を携帯機1及び出口ゲートの通信端末2に通知し、これにより出口のゲート機は開門する。なお、料金一定の有料道路の場合は入口ゲートで一定額を課金処理し、その後に開門しても良い。

【0050】図10は第4の実施の形態によるシステム構成を示す図で、図において2a、2bは夫々に図4の通信端末に無線通信機能を付加した無線端末である。無線端末2は携帯機1と直接インタフェース可能な無線通信機能（例えばPHSにおける子機間通話機能等）を備えており、利用者aは公衆網を介さずに、無線端末2を介して金融機関3又は集計センタ4にアクセス可能となる。

【0051】ここでは、有料道路の場合を説明する。無線端末2aは、放送的な接続要求を制御キャリア等で常時出力しており、利用者aは入口ゲートに近づくと無線端末2aに着信応答を返して通信キャリアに移行する。その後、利用者aはゲートの入口付近で集計センタ4に発呼し、入口ゲートに表記されているID情報を通知する。

【0052】又は、この場合の携帯機1は無線端末2aに非接触で利用者aのID情報を通知することが可能であり、該通知後は無線端末2aが集計センタ4に発呼しても良い。その後の処理は上記と同様でよい。また、出口ゲートにおける処理も同様である。なお、上記本発明に好適なる複数の実施の形態を述べたが、本発明思想を逸脱しない範囲内で、構成、制御、及びこれらの組合せの様々な変更が行えることは言うまでも無い。

【0053】

【発明の効果】以上述べた如く本発明によれば、別段のインフラ整備を必要とせず、単一の携帯機であらゆる料金の支払にキャッシュレスで対応できる。

【図面の簡単な説明】

【図1】図1は本発明の原理を説明する図である。

【図2】図2は第1の実施の形態によるシステム構成を示す図である。

【図 3】図 3 は実施の形態による一例の携帯機を説明する図である。

【図 4】図 4 は実施の形態による一例の通信端末装置を説明する図である。

【図 5】図 5 は第 1 の実施の形態による通信動作を説明する図である。

【図 6】図 6 は第 2 の実施の形態によるシステム構成を示す図である。

【図 7】図 7 は第 2 の実施の形態による通信動作を説明する図である。

【図 8】図 8 は第 3 の実施の形態によるシステム構成を示す図である。

【図 9】図 9 は第 3 の実施の形態による通信動作を説明する図である。

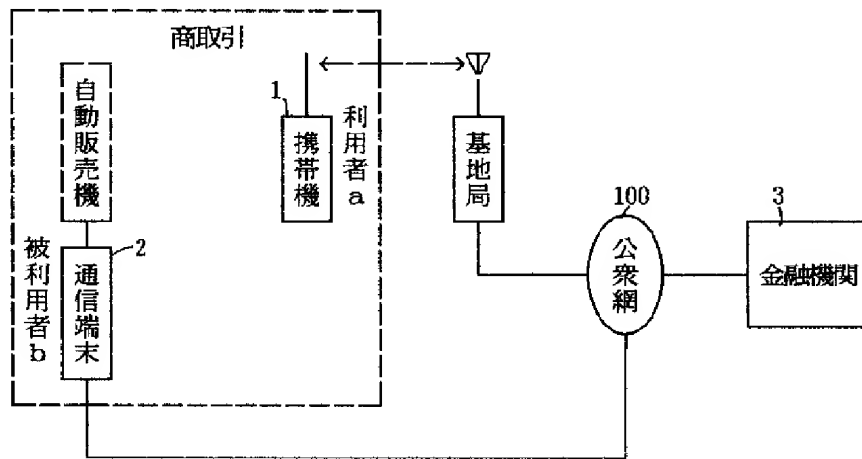
【図 10】図 10 は第 4 の実施の形態によるシステム構成を示す図である。

【符号の説明】

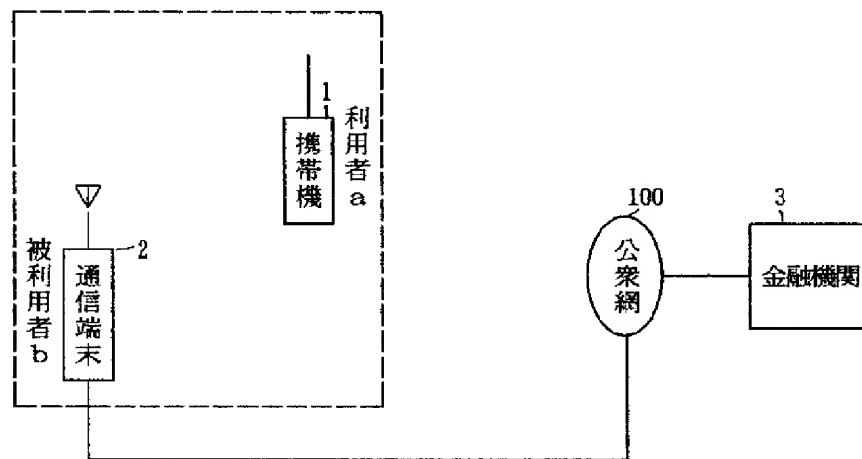
- 1 携帯機
- 2 通信端末
- 3 金融機関

【図 1】

本発明の原理を説明する図



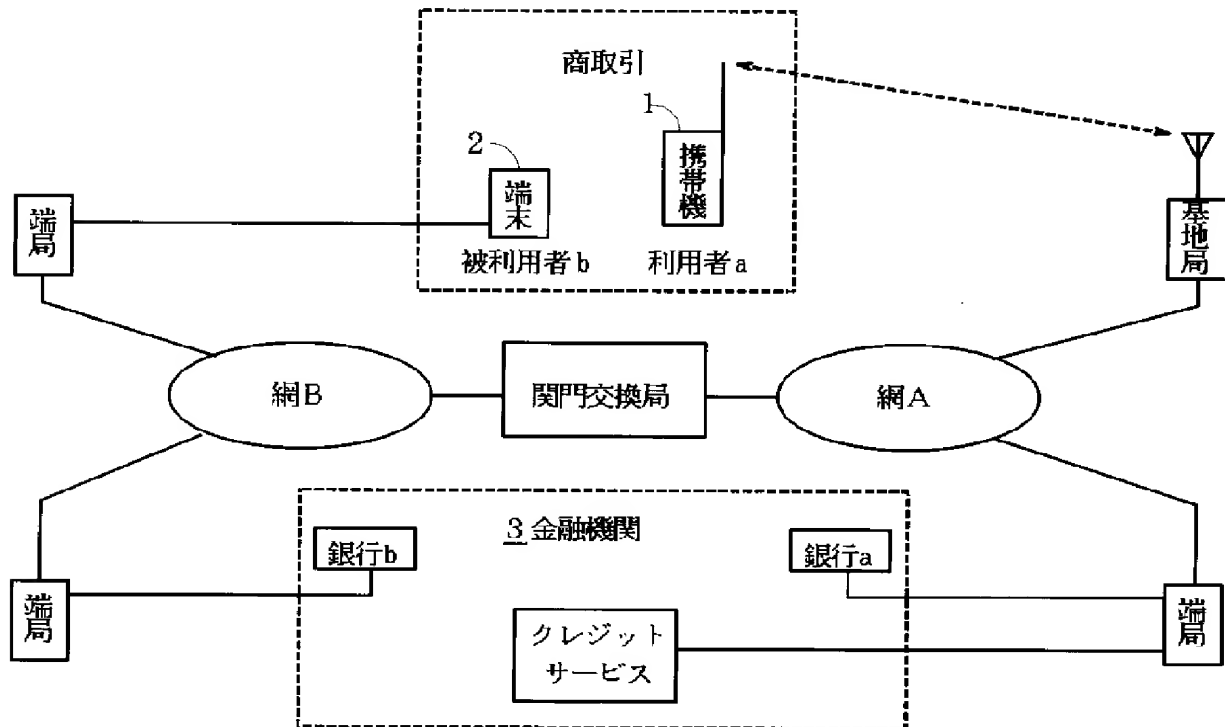
(A)



(B)

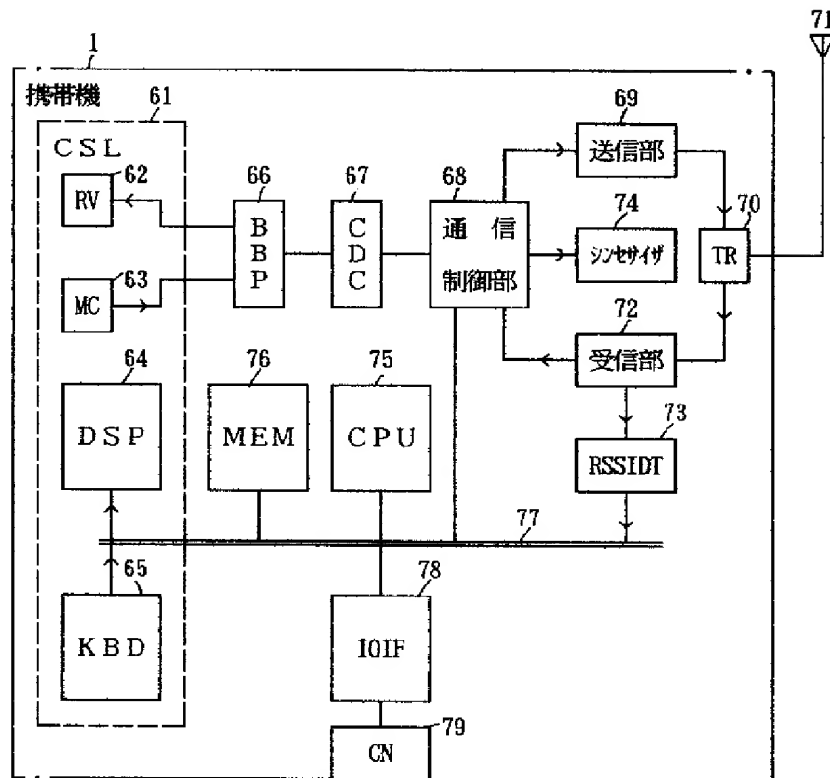
【図2】

第1の実施の形態によるシステム構成を示す図



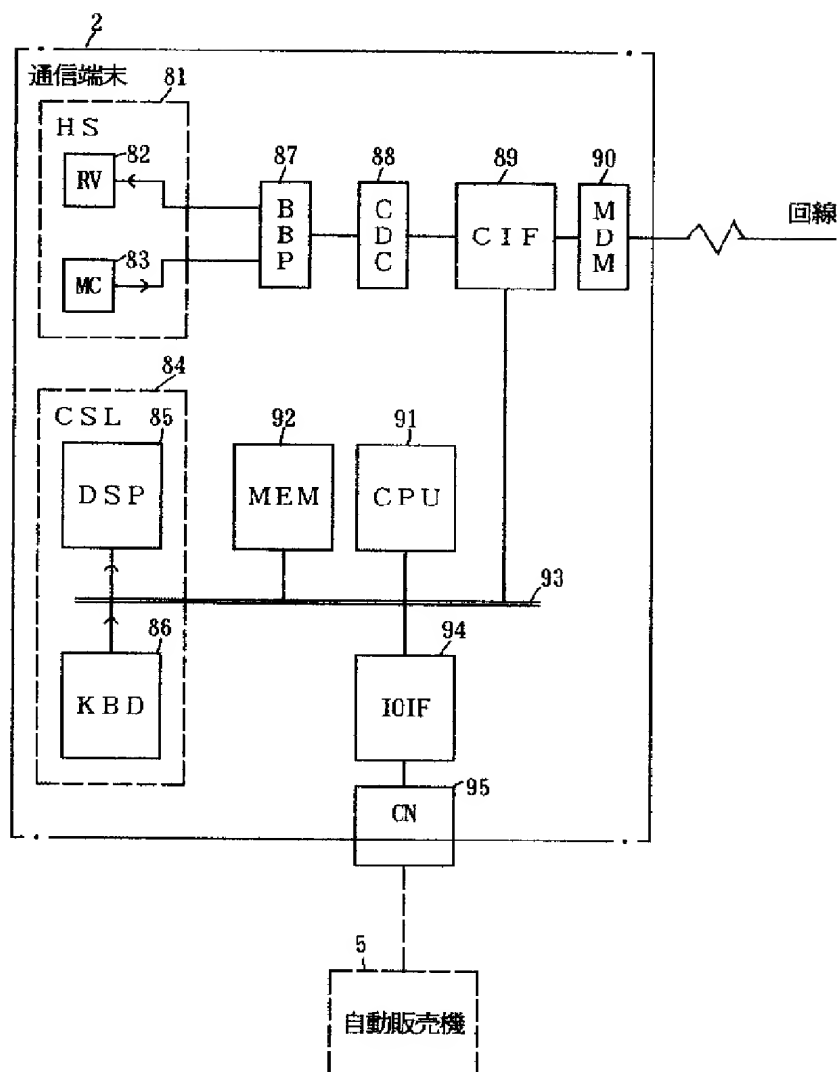
【図 3】

実施の形態による携帯機を説明する図



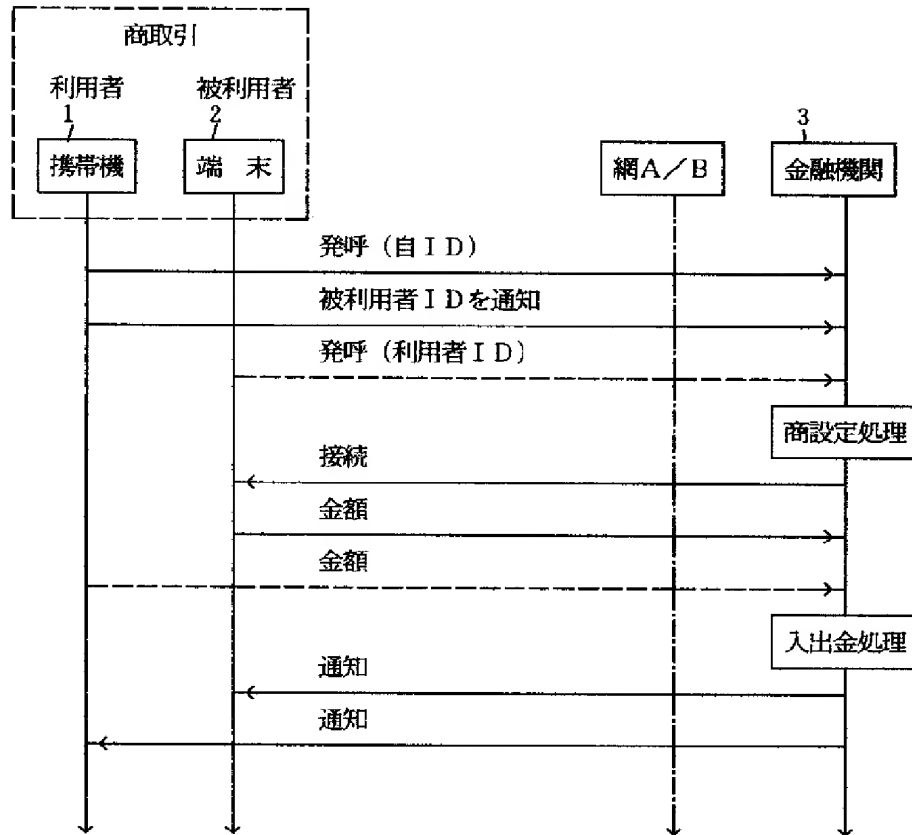
【図4】

実施の形態による通信端末を説明する図



【図5】

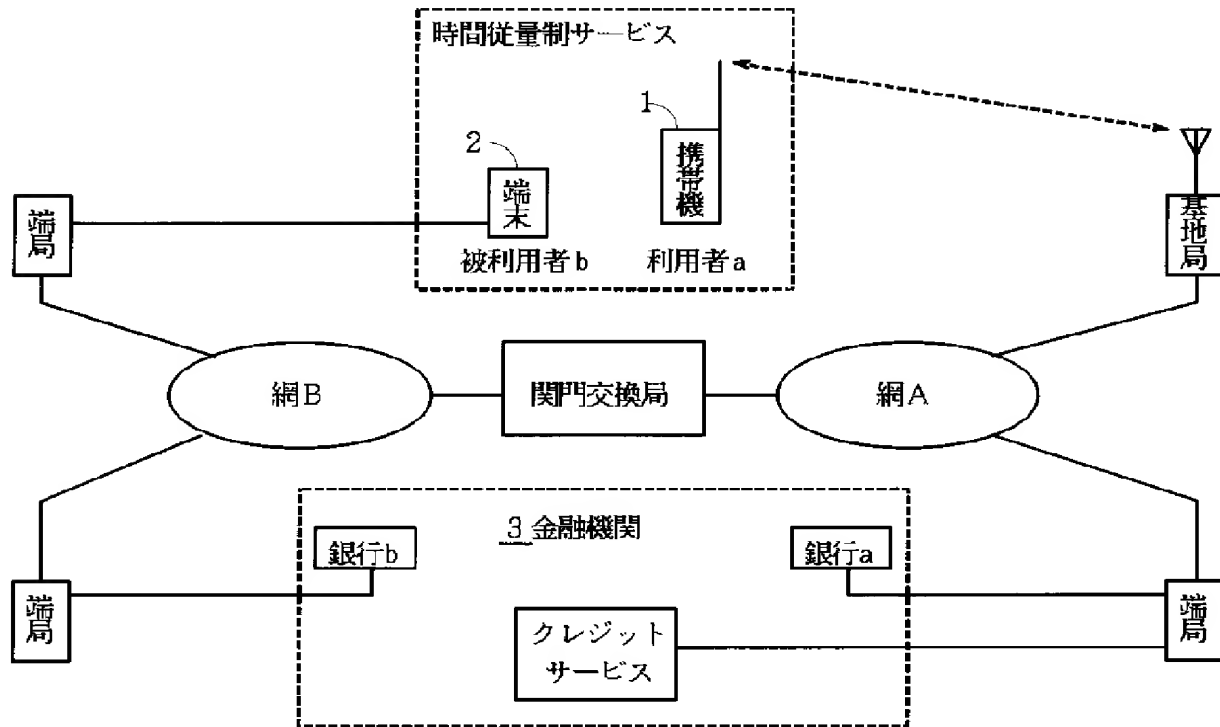
第1の実施の形態による通信動作を説明する図





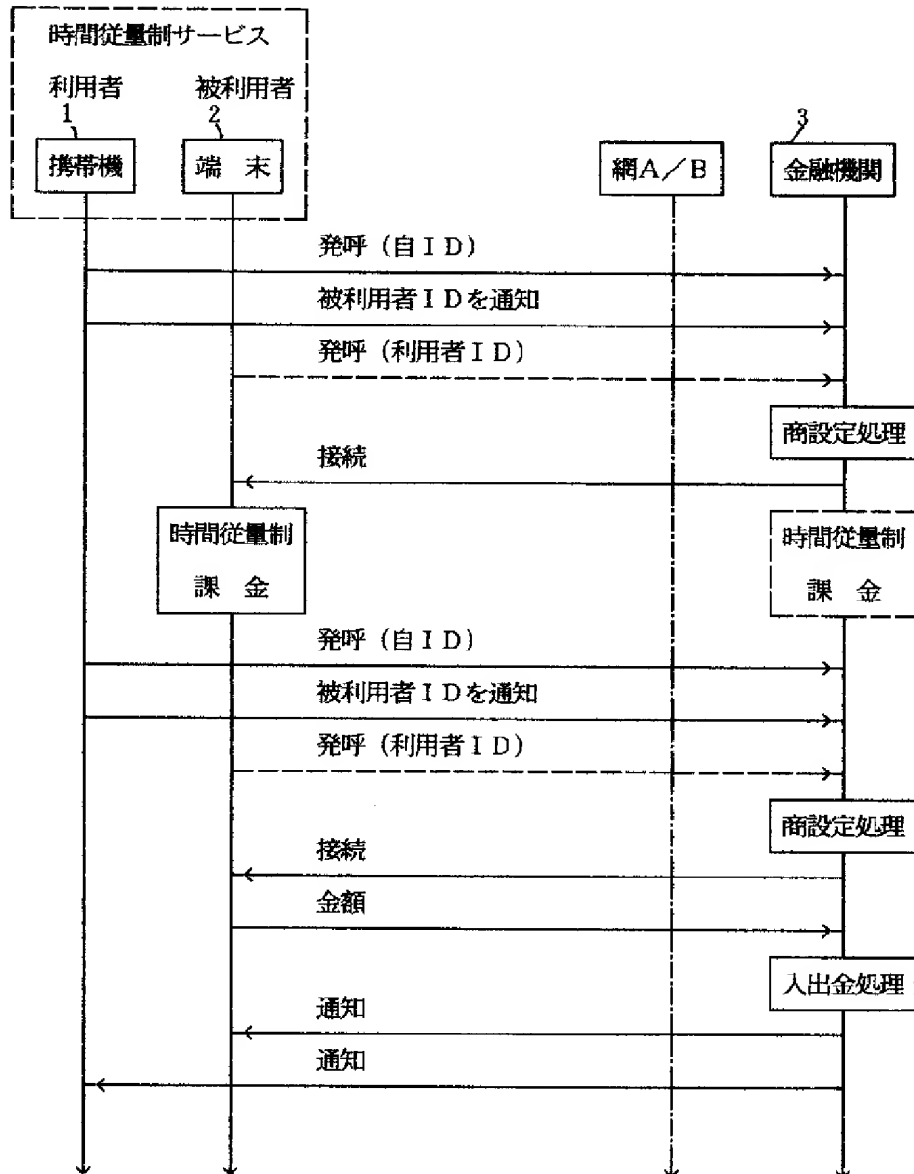
【図6】

第2の実施の形態によるシステム構成を示す図



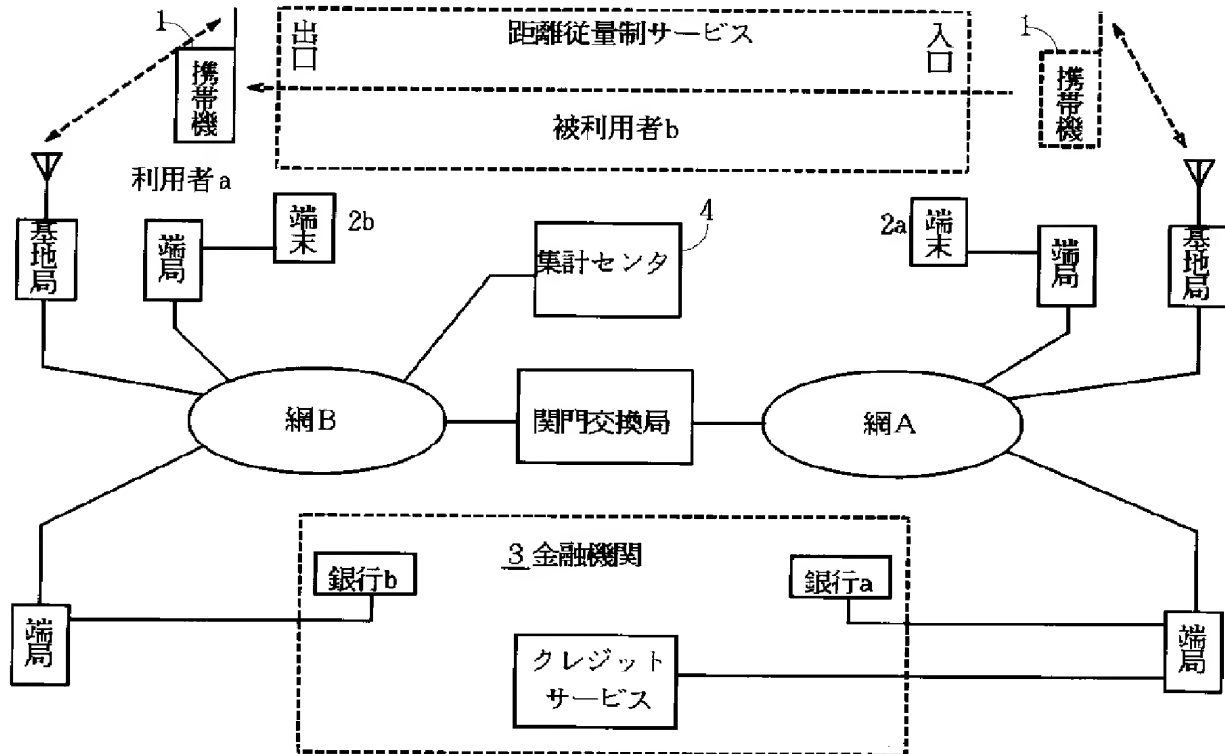
【図 7】

第 2 の実施の形態による通信動作を説明する図



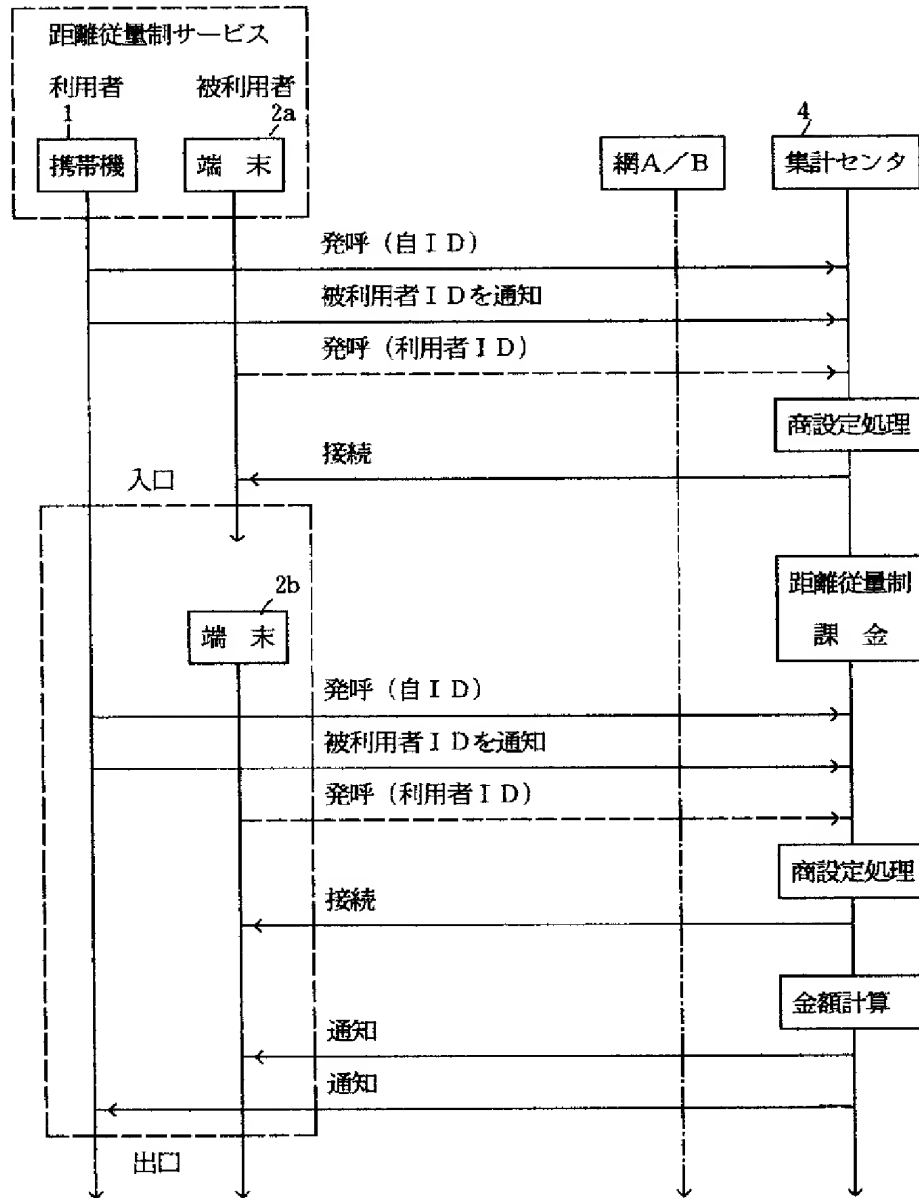
【図8】

第3の実施の形態によるシステム構成を示す図



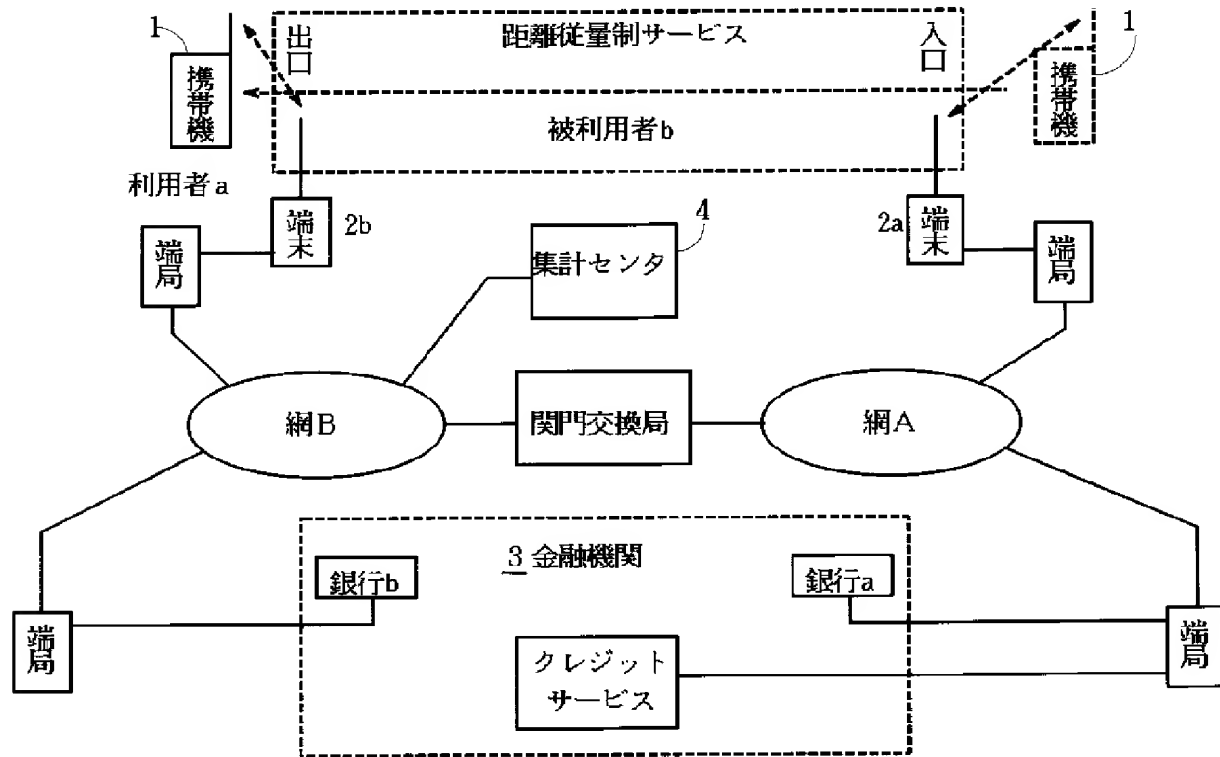
【図9】

第3の実施の形態による通信動作を説明する図



【図10】

第4の実施の形態によるシステム構成を示す図



フロントページの続き

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